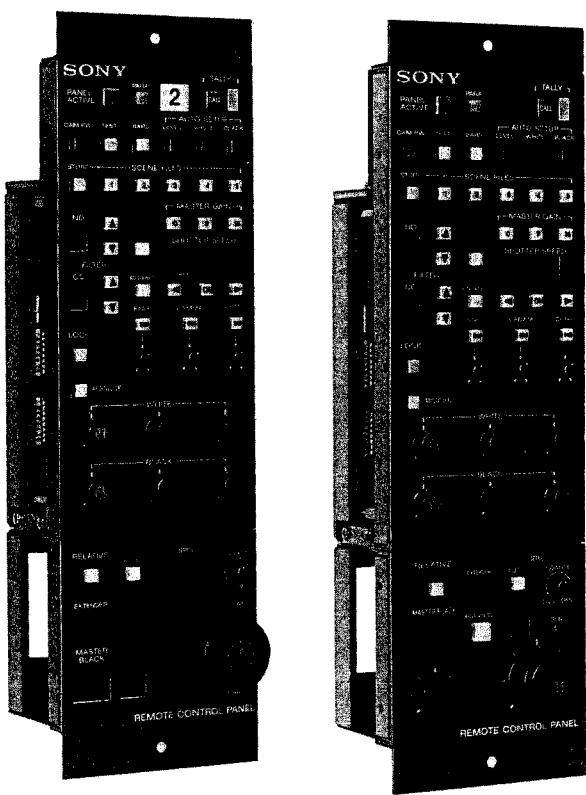


**SONY®**

# REMOTE CONTROL PANEL

**RCP-3720**  
**RCP-3721**



# OPERATION AND MAINTENANCE MANUAL

## 1st Edition (Revised 6)

### Serial No. 10001 and Higher

### **For the customers in the USA**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

### **For the customers in Canada**

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

### **Pour les utilisateurs au Canada**

Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiés dans le Règlement sur le brouillage radioélectrique.

このマニュアルに記載されている事柄の著作権は当社にあり、説明内容は機器購入者の使用を目的としています。

従って、当社の許可なしに無断で複写したり、説明内容(操作、保守等)と異なる目的で本マニュアルを使用することを禁止します。

The material contained in this manual consists of information that is the property of Sony Corporation and is intended solely for use by the purchasers of the equipment described in this manual.

Sony Corporation expressly prohibits the duplication of any portion of this manual or the use thereof for any purpose other than the operation or maintenance of the equipment described in this manual without the express written permission of Sony Corporation.

Le matériel contenu dans ce manuel consiste en informations qui sont la propriété de Sony Corporation et sont destinées exclusivement à l'usage des acquéreurs de l'équipement décrit dans ce manuel.

Sony Corporation interdit formellement la copie de quelque partie que ce soit de ce manuel ou son emploi pour tout autre but que des opérations ou entretiens de l'équipement à moins d'une permission écrite de Sony Corporation.

Das in dieser Anleitung enthaltene Material besteht aus Informationen, die Eigentum der Sony Corporation sind, und ausschließlich zum Gebrauch durch den Käufer der in dieser Anleitung beschriebenen Ausrüstung bestimmt sind.

Die Sony Corporation untersagt ausdrücklich die Vervielfältigung jeglicher Teile dieser Anleitung oder den Gebrauch derselben für irgendeinen anderen Zweck als die Bedienung oder Wartung der in dieser Anleitung beschriebenen Ausrüstung ohne ausdrückliche schriftliche Erlaubnis der Sony Corporation.

# 目次

## TABLE OF CONTENTS

### 1. 取り扱い操作

1-1. 概要 .....	1-1 (J)
1-2. 各部の名称と働き .....	1-3 (J)
1-2-1. 電源および信号切り換えブロック .....	1-4 (J)
1-2-2. タリーブロック .....	1-5 (J)
1-2-3. オートセットアップブロック .....	1-6 (J)
1-2-4. シーンファイルブロック .....	1-7 (J)
1-2-5. フィルターおよびマスターゲイン 切り換えブロック .....	1-8 (J)
1-2-6. シャッタースピード切り換え ブロック .....	1-10 (J)
1-2-7. LOCKボタン .....	1-11 (J)
1-2-8. ニー/ガンマ/ディテイル 調整ブロック .....	1-12 (J)
1-2-9. ペイントイングブロック .....	1-13 (J)
1-2-10. アイリスマスター/ブラック 調整ブロック .....	1-14 (J)
1-2-11. コネクターパネル .....	1-18 (J)
1-3. 接続 .....	1-19 (J)
1-3-1. CCUの接続 .....	1-19 (J)
1-3-2. プレビュー/コネクター .....	1-20 (J)
1-4. 操作 .....	1-21 (J)
1-4-1. ホワイトバランスとブラックバランスの 自動調整 .....	1-22 (J)
1-4-2. 絞りの調整 .....	1-23 (J)
1-4-3. シーンファイル操作 .....	1-24 (J)
1-5. 仕様 .....	1-26 (J)

### 1. OPERATION

1-1. Overview .....	1-1 (E)
1-2. Locations and Functions of Parts and Controls .....	1-3 (E)
1-2-1. Power Supply and Signal Selector Block .....	1-4 (E)
1-2-2. Tally Block .....	1-5 (E)
1-2-3. Auto Setup Block .....	1-5 (E)
1-2-4. Scene File Block .....	1-7 (E)
1-2-5. Filter and Master Gain Selector Block .....	1-8 (E)
1-2-6. Shutter Speed Selector Block .....	1-10 (E)
1-2-7. LOCK Button .....	1-11 (E)
1-2-8. Knee, Gamma and Detail Adjustment Block .....	1-12 (E)
1-2-9. Painting Block .....	1-13 (E)
1-2-10. Iris and Master Black Adjustment Block .....	1-14 (E)
1-2-11. Connector Panel .....	1-17 (E)
1-3. Connections .....	1-18 (E)
1-3-1. Connection to the CCU .....	1-18 (E)
1-3-2. PREVIEW Connector .....	1-19 (E)
1-4. Operation .....	1-20 (E)
1-4-1. Automatic Adjustment of White and Black Balance .....	1-21 (E)
1-4-2. Iris Adjustment .....	1-22 (E)
1-4-3. Scene File Operation .....	1-23 (E)
1-5. Specifications .....	1-24 (E)

### 2. 設置

2-1. 開梱と再梱包 .....	2-1 (J)
2-2. 標準付属品 .....	2-2 (J)
2-3. 適合コネクター/ケーブル .....	2-3 (J)
2-3-1. コネクターの入出力信号 .....	2-3 (J)
2-3-2. 接続コネクター .....	2-4 (J)
2-4. 設置使用環境 .....	2-5 (J)
2-5. 設置スペース .....	2-6 (J)
2-5-1. 設置条件 .....	2-6 (J)
2-5-2. 外形寸法 .....	2-6 (J)
2-5-3. コンソールへの取り付け方法 .....	2-8 (J)
2-6. 基板内スイッチのセッティング .....	2-9 (J)
2-7. システム接続 .....	2-10 (J)

### 2. INSTALLATION

2-1. Packing and Unpacking .....	2-1 (E)
2-2. Supplied Accessories .....	2-2 (E)
2-3. Connectors and Cables .....	2-3 (E)
2-3-1. Connector Input/Output Signals .....	2-3 (E)
2-3-2. Connectors .....	2-4 (E)
2-4. Operating Environment .....	2-5 (E)
2-5. Installation Space .....	2-6 (E)
2-5-1. Installation Conditions .....	2-6 (E)
2-5-2. Outside Dimensions .....	2-6 (E)
2-5-3. Installation to Console .....	2-8 (E)
2-6. Function of Switch ON PC Board .....	2-9 (E)
2-7. System Configuration .....	2-10 (E)

### 3. サービスインフォメーション

3-1. 主要部品の交換方法 .....	3-1 (J)
3-1-1. 外装の外し方 .....	3-1 (J)
3-1-2. ジョイスティックボリュームの交換方法 (RCP-3720のみ) .....	3-2 (J)
3-1-3. コントロールパネルの外し方 .....	3-3 (J)
3-2. サービス上の注意事項 .....	3-4 (J)
3-2-1. PROM IC .....	3-4 (J)
3-2-2. 補修用部品の注意事項 .....	3-4 (J)
3-2-3. 治工具 .....	3-4 (J)
3-2-4. チップ部品交換時の注意事項 .....	3-5 (J)

### 3. SERVICE INFORMATION

3-1. Replacement of Main Parts .....	3-1 (E)
3-1-1. Cabinet Removal .....	3-1 (E)
3-1-2. Replacement of Joystick Control (only for RCP-3720) .....	3-2 (E)
3-1-3. Removal of Control Panels .....	3-3 (E)
3-2. Note on Maintenance Services .....	3-4 (E)
3-2-1. PROM IC .....	3-4 (E)
3-2-2. Note on Replacement Parts .....	3-4 (E)
3-2-3. Fixture .....	3-4 (E)
3-2-4. Replacement of Chip Parts .....	3-5 (E)

## **A. DIAGRAMS**

Board Layout .....	A-1
Block Diagram .....	A-4
Frame (1/2)	
MPU-53.....	A-9
Frame (2/2)	
DSP-27, DSP-28, IR-12, LED-98, LED-109, SW-371 .....	A-14

## **B. SEMICONDUCTOR PIN ASSIGNMENTS**

## **C. SPARE PARTS**

Parts Information .....	C-1
Exploded View .....	C-2
Screws .....	C-6
Electrical Parts List .....	C-7
Packing Materials & Supplied Accessories .....	C-12



# 第1章 取り扱い操作

## 1-1. 概要

リモートコントロールパネルRCP-3720/3721は、3板式CCDカラービデオカメラBVP-370/270の調整機能を、カメラコントロールユニットCCU-370を介してリモートコントロールするためのコントロールパネルです。本機は、専用のケーブルでCCU-370に接続することにより、CCU-370から最大200m離して使用することができます。

RCP-3720とRCP-3721は、アイリス/マスター/ブラック調整部の形状が異なるだけで、機能的にはまったく同一です。アイリス/マスター/ブラック調整部は、RCP-3720ではジョイスティックタイプ、RCP-3721ではつまみになっています。

本機の主な特長は次の通りです。

### カメラの基本的オペレーションに適した操作性

本機は、カメラの基本的オペレーションに必要かつ十分なコントロール機能を備えています。操作ボタン、調整つまみ等は、機能別に、使う頻度を考慮してパネル上に配置し、さらに操作手順が自照式ボタンの点滅や点灯の状態でわかるように工夫されています。

また、誤操作した場合にカメラの動作やセットアップに重大な影響を及ぼすボタンの周囲にはガードを付けるなど、さまざまな機能を簡単に、そして間違いなく操作できるようになっています。

### シーンファイル機能

撮影シーンに合わせて、ペインティング等の操作により調整したデータを、シーンファイルとして最大5つまで保管しておき、必要に応じてデータを呼び出して、シーンに合った撮影条件を簡単に再現することができます。

### カメラのシャッタースピードをコントロール可能

CCDカメラの電子シャッタースピードを、ボタン操作で6段階に切り換えることができます。

### デジタル回線による接続

カメラコントロールユニットと本機との間は、デジタル回線による信号の受け渡しを行います。1本の接続ケーブル(CCA-2)ですべての信号の授受を確実に行うことができます。

#### **MSUとの同時コントロールが可能**

本機とマスターセットアップユニットMSU-350との同時コントロールが可能です。同時コントロールのモードはパラレル（並行）、スプリット（分担）の2種類があります。パラレルモードのときは、本機側はすべての機能を使えますが、マスターセットアップユニット側では、絞りとマスターBLACKの調整機能が使えなくなります。一方、スプリットモードのときは、本機側では絞りとマスターBLACKの調整のみが可能になります（スプリットモードのときも、マスターセットアップユニット側では絞り/MasterBLACK調整機能を使えません）。

#### **ベータカムカメラのコントロールも可能**

本機をカメラコントロールユニットCCU-350/355に接続すれば、カメラアダプターを取り付けたベータカムシリーズカメラ（BVP-7/50/70/7000HSなど）もコントロールできます。

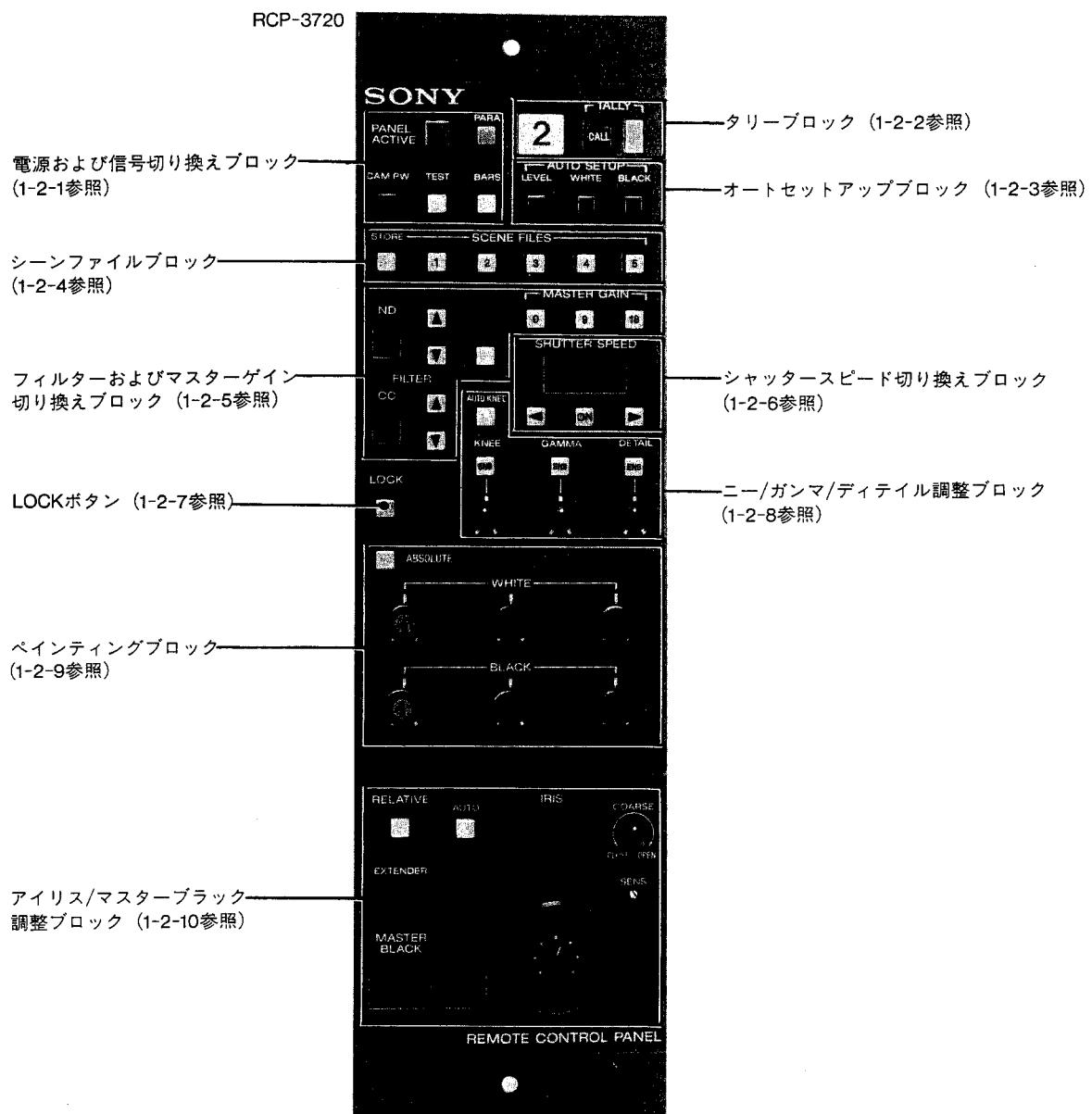
#### **19インチのラックに4台取り付け可能**

本機は、19インチのEIA標準ラックに4台並べて取り付けることができます。（高さは7ユニット）

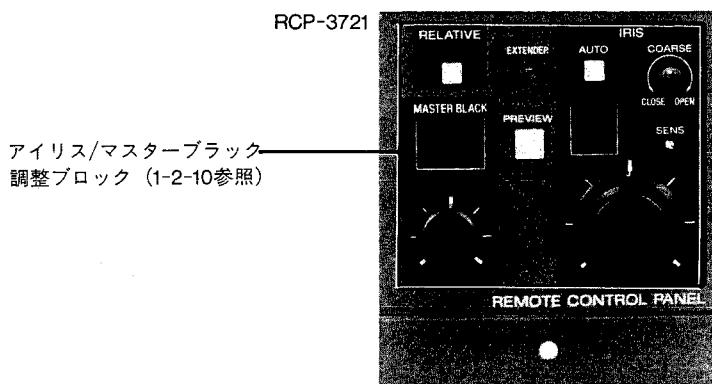
本機は、CCDカラービデオカメラ専用のリモートコントロールパネルです。  
撮像管式カメラのコントロールはできません。

## 1-2. 各部の名称と働き

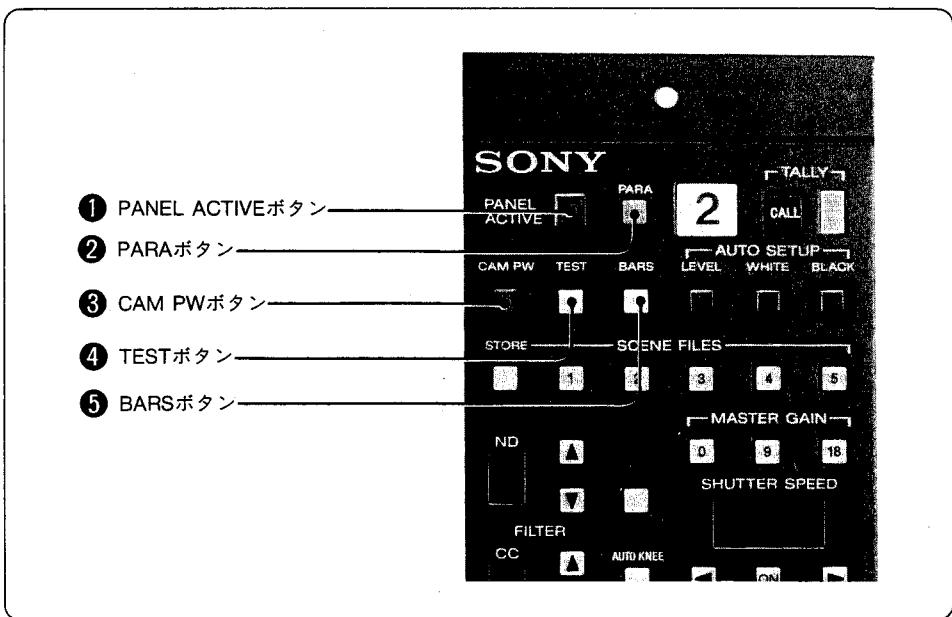
RCP-3720



RCP-3721



## 1-2-1. 電源および信号切り換えブロック



### ① PANEL ACTIVE (パネルアクティブ) ボタン

本機に接続したカメラシステムを本機でコントロールするときに、押して点灯させます。このボタンが消灯しているときは、本機からカメラシステムをコントロールすることはできません。ただし、カメラの現在の状態を表示する機能は、PANEL ACTIVEボタンの消灯時も働きます。

### ② PARA (同時コントロール) ボタン

点灯または点滅することによって、本機がマスター設定アップユニットとの同時コントロール状態にあることを示します。パラレルモードのとき点灯し、スプリットモードのとき点滅します。

パラレルモード（点灯）は、ボタンを押して消灯させれば解除できますが、スプリットモード（点滅）は解除できません。（パラレルモード時は、本機のすべての機能を使えますが、スプリットモード時は、本機側では絞りとマスターブラックの調整のみ可能です。）

### ③ CAM PW (カメラヘッド電源) ボタン

押して点灯させると、カメラヘッドに電源が供給されます。

もう一度押して消灯させると、カメラヘッドに電源が供給されなくなります。



#### ④ TEST (テスト) ボタン

押して点灯させると、カメラのテスト信号発生器が作動して、ビデオ回路チェック用のテスト信号（のこぎり波形）が出力されます。

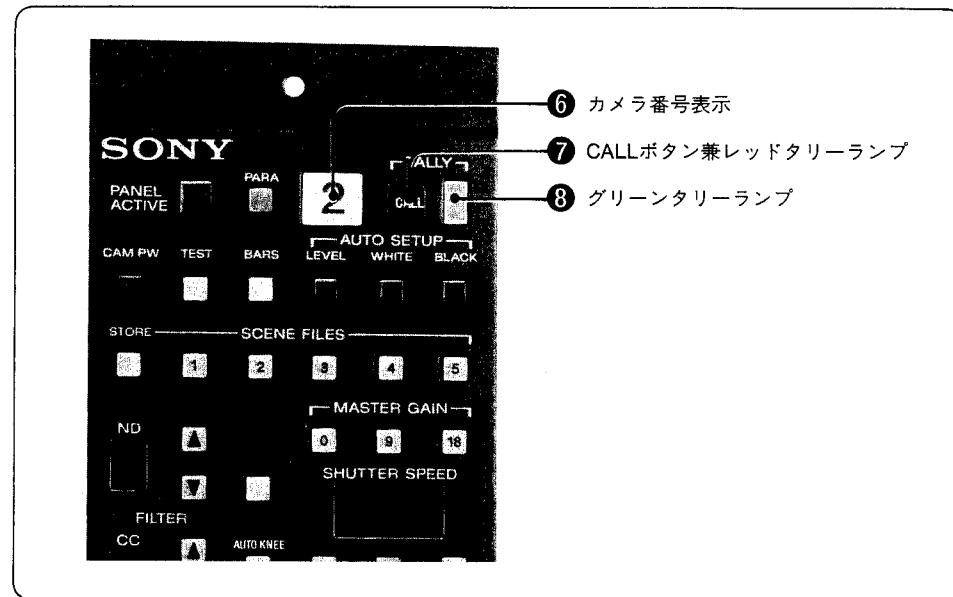
もう一度押して消灯させると、テスト信号は出力されなくなります。

#### ⑤ BARS (カラーバー) ボタン

押して点灯させると、カラーバー信号が出力されます。

もう一度押して消灯させると、カラーバー信号は出力されなくなります。

### 1-2-2. タリーブロック



#### ⑥ カメラ番号表示

本機でコントロールするカメラと同じ番号のナンバープレート（付属）を、ここに取り付けます。

#### ⑦ CALL (コール) ボタン兼レッドタリーランプ

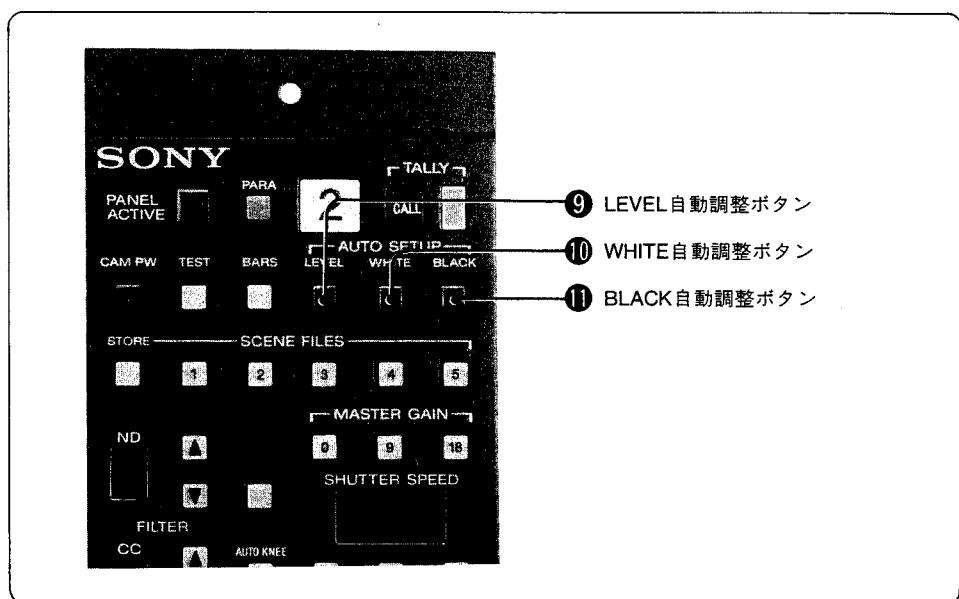
押しているあいだ、カメラヘッドおよびカメラコントロールユニットのレッドタリーランプが点灯します。

また、カメラにレッドタリー信号が入力されると点灯します。

#### ⑧ グリーンタリーランプ

カメラにグリーンタリー信号が入力されると点灯します。

### 1-2-3. オートセットアッププロック



#### ⑨ LEVEL (レベル) 自動調整ボタン

押して点灯させると、ガンマバランス、ニーポイント、マスターブラックレベルが自動的に調整されます。調整が完了するとボタンは消灯します。

自動調整時にエラーが発生した場合は、ボタンが点滅します。点滅を止めるには、本機のいずれかのボタンを押します。

#### ⑩ WHITE (ホワイトバランス) 自動調整ボタン

押して点灯させると、ホワイトバランスが自動的に調整されます。調整が完了するとボタンは消灯します。

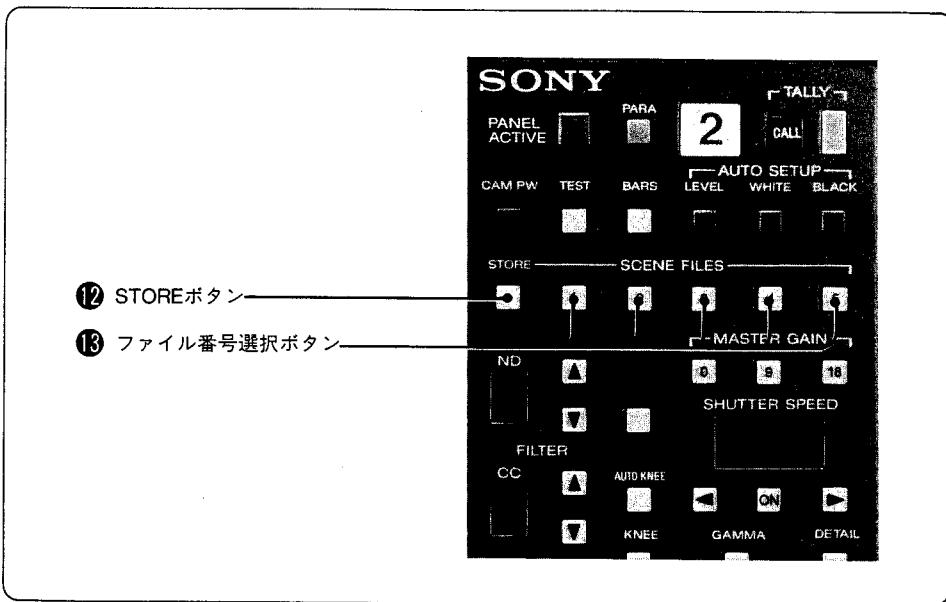
自動調整時にエラーが発生した場合は、ボタンが点滅します。点滅を止めるには、本機のいずれかのボタンを押します。

#### ⑪ BLACK (ブラックバランス) 自動調整ボタン

押して点灯させると、ブラックバランスとブラックセットが自動的に調整されます。調整が完了するとボタンは消灯します。

自動調整時にエラーが発生した場合は、ボタンが点滅します。点滅を止めるには、本機のいずれかのボタンを押します。

## 1-2-4. シーンファイルブロック



⑫ STOREボタン  
⑬ ファイル番号選択ボタン

### ⑫ STORE（シーンファイル登録）ボタン

押して点滅させると、引き続きファイル番号選択ボタン⑬で選択したファイルに、カメラの現在の調整値を登録することができます。ファイルに調整値が登録されると、このボタンは消灯します。

登録を中止したいときは、ファイル番号選択ボタンを押す前に、もう一度このボタンを押して点滅を止めます。

### ⑬ ファイル番号選択ボタン

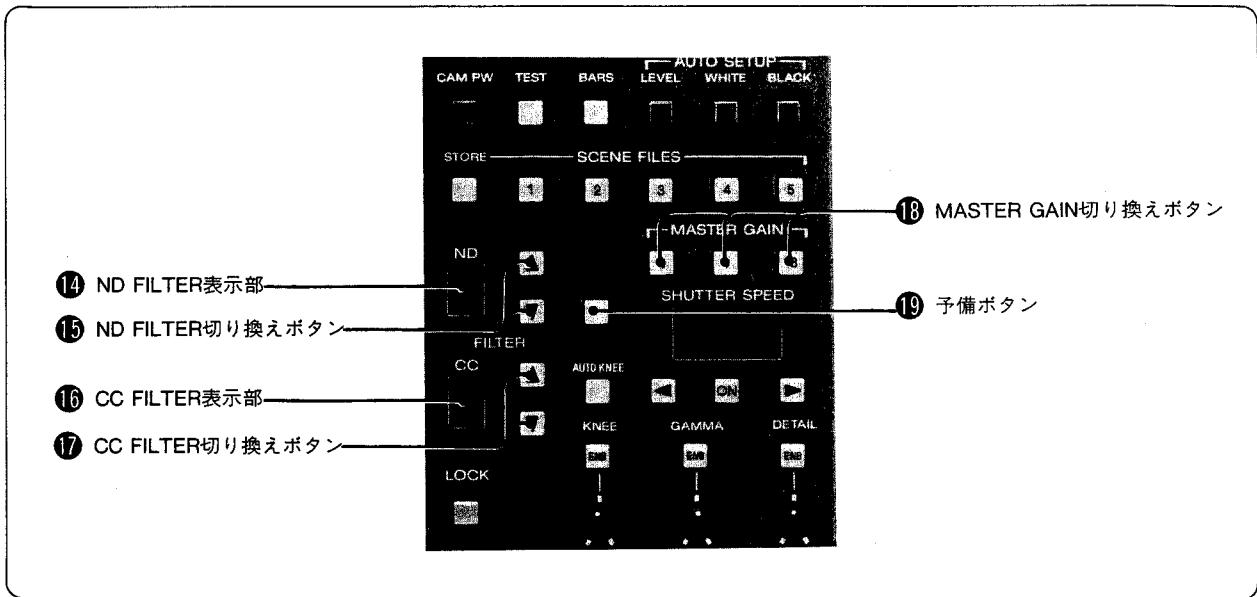
#### STOREボタン⑫の点滅時:

これらのボタンの1つを押して点灯させると、その番号のファイルに現在の調整値が保管されます。

#### STOREボタン⑫の消灯時:

- これらのボタンの1つを押して点灯させると、その番号のファイルが呼び出されます。
- 点灯しているボタンを押して消灯させると、その番号のファイルが呼び出される前の状態に戻ります。

## 1-2-5. フィルターおよびマスターゲイン切り換えブロック



### ⑭ ND FILTER (NDフィルター) 表示部

現在選択されているNDフィルターを示します。BVP-370/270のカメラシステムをコントロールするときは、表示される番号とNDフィルターは次のように対応しています。

- 1: 素通し
- 2: 1/4 ND
- 3: 1/8 ND
- 4: 1/16 ND

### ⑮ ND FILTER (NDフィルター) 切り換えボタン

一度押すと点灯します。点灯中は、押すたびにNDフィルターが次の順序で切り換わります（押し続けると、順次切り換わります）。

▲ :

▼ :



#### ⑯ CC FILTER (色温度変換フィルター) 表示部

現在選択されている色温度変換フィルターを示します。BVP-370/270のカメラシステムをコントロールするときは、表示される記号と色温度変換フィルターは次のように対応しています。

A: 特殊フィルター\*

B: 3200K

C: 4300K

D: 6300K

\* カメラヘッドBVP-370/270の工場出荷時は、クロスフィルターが装着されています。ほかのフィルターをご希望の場合は、ソニーの担当者にご相談ください。

#### ⑰ CC FILTER (色温度変換フィルター) 切り替えボタン

一度押すと点灯します。点灯中は、押すたびに色温度変換フィルターが次の順序で切り換わります（押し続けると、順次切り換わります）。

▲ : [A rectangular box containing a sequence of arrows pointing from A to B to C to D to A]

▼ : [A rectangular box containing a sequence of arrows pointing from D to C to B to A to D]

なお、⑯と⑰のボタンは、いずれか1つを押せばすべてが点灯し、NDフィルター、色温度変換フィルターともに切り換え可能となります。

#### ⑱ MASTER GAIN (マスターゲイン) 切り替えボタン

被写体の照度に応じて映像利得を切り替えたいとき、希望のボタンを押して点灯させます。

0: 0dB

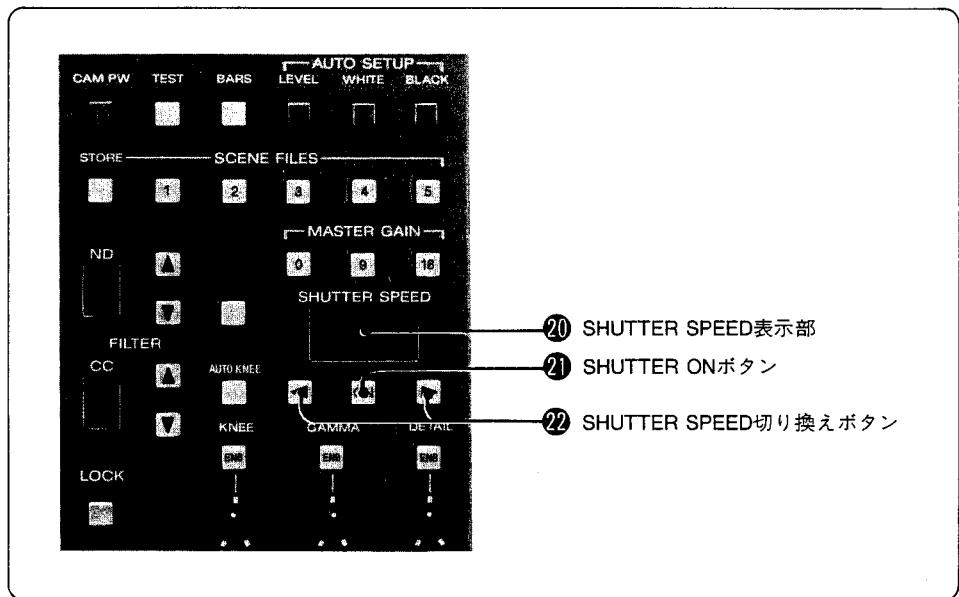
9: 9dB

18: 18dB

#### ⑲ 予備ボタン

このボタンには、いかなる機能も割り当てられていません。

## 1-2-6. シャッタースピード切り換えブロック



### ⑩ SHUTTER SPEED (シャッタースピード) 表示部

現在選択されているシャッタースピードを表示します。

100: 1/100秒

125: 1/125秒

250: 1/250秒

500: 1/500秒

1000: 1/1000秒

2000: 1/2000秒

### ⑪ SHUTTER ON (シャッター オン) ボタン

押して点灯させると、現在選択されている（すなわちSHUTTER SPEED表示部⑩に表示されている）シャッタースピードで、カメラの電子シャッターが動作します。

もう一度押して消灯させると、シャッターは動作しなくなります。

このボタンの点灯時は、SHUTTER SPEED切り換えボタン⑫で、実際にカメラのシャッタースピードを切り換えることができます。



## ② SHUTTER SPEED (シャッタースピード) 切り替えボタン

SHUTTER ONボタン①を点灯させると、これらのボタンも点灯し、もう一度SHUTTER ONボタンを押して消灯させると、これらのボタンも消灯します。

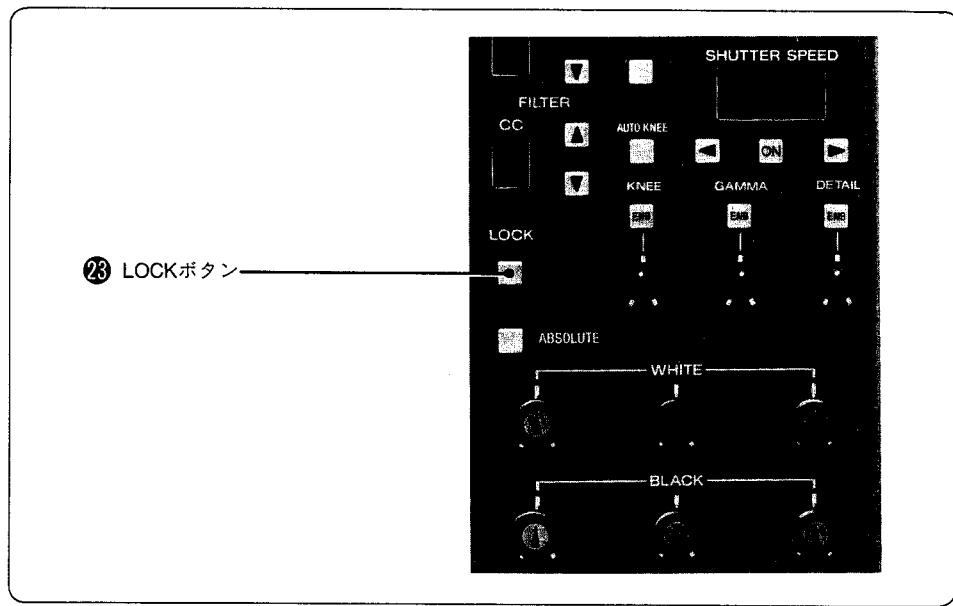
これらのボタンの点灯時は、押すたびにシャッタースピード（単位：秒）が次の順序で切り換わります（押し続けると、順次切り換わります）。

▶ :  $1/100 \rightarrow 1/125 \rightarrow 1/250 \rightarrow 1/500 \rightarrow 1/1000 \rightarrow 1/2000 \rightarrow$

◀ :  $1/2000 \rightarrow 1/1000 \rightarrow 1/500 \rightarrow 1/250 \rightarrow 1/125 \rightarrow 1/100 \rightarrow$

消灯時は、ボタンを押しても、本機側におけるシャッタースピードの選択が変わる（SHUTTER SPEED表示部⑩に表示される数値が変わる）だけで、カメラのシャッタースピードそのものは切り換わりません。

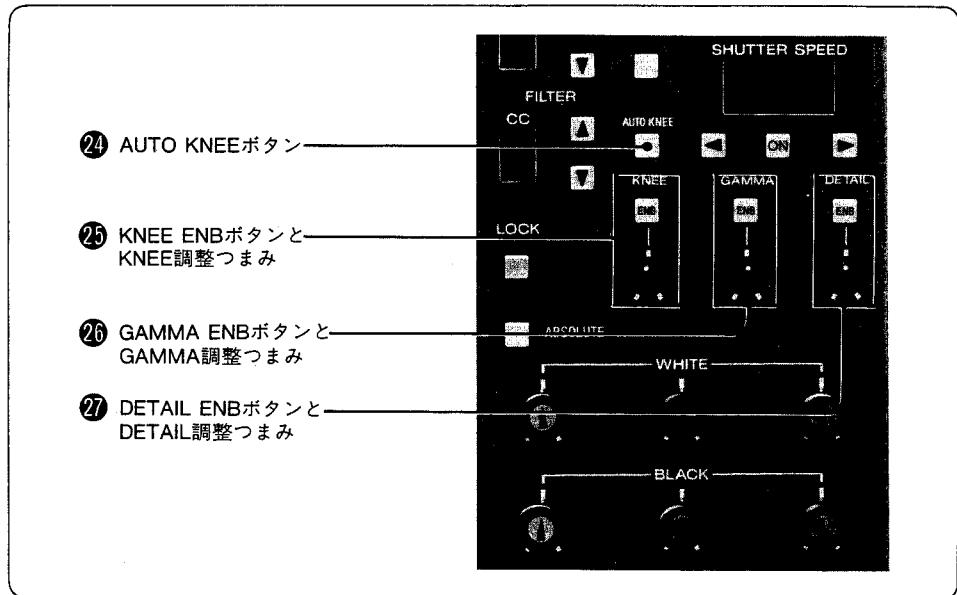
## 1-2-7. LOCKボタン



## ③ LOCK (ロック) ボタン

押して点灯させると、アイリス/マスター/ブラック調整ブロック以外のボタンや調整つまみが働かなくなります。もう一度押して消灯させると、ボタンやつまみが再び働くようになります。

## 1-2-8. ニー/ガンマ/ディテイル調整ブロック



### ②₄ AUTO KNEE（オートニー）ボタン

押して点灯させると、カメラヘッドのオートニーアイ回路が作動します。

もう一度押して消灯させると、オートニーアイ回路は作動しなくなります。

### ②₅ KNEE ENB（ニー イネーブル）ボタンとKNEE（ニーポイント）調整つまみ

ボタンを押して点灯させると、下のつまみでニーポイントを調整できます。ボタン消灯時は、つまみは働きません。

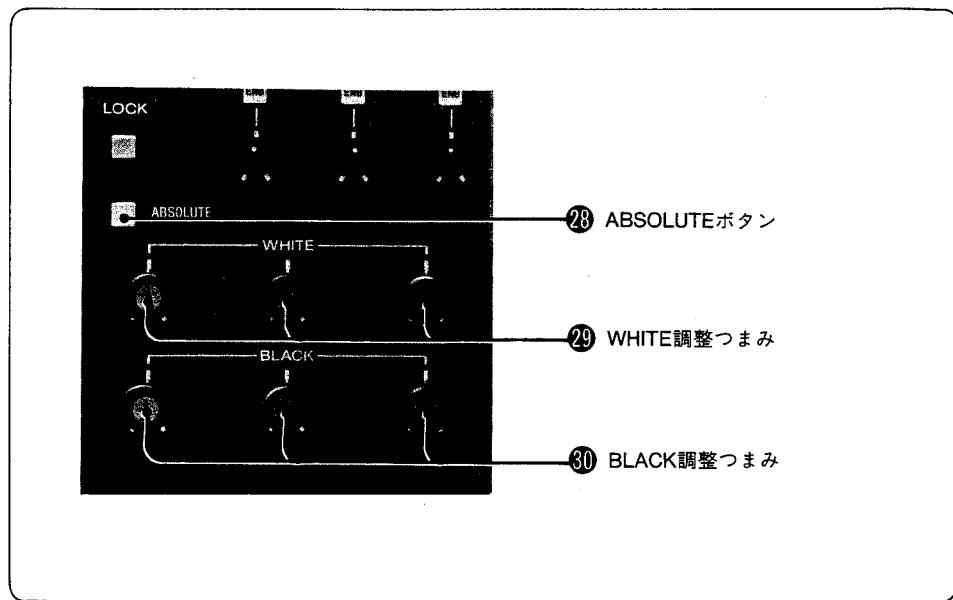
### ②₆ GAMMA ENB（ガンマ イネーブル）ボタンとGAMMA（ガンマ）調整つまみ

ボタンを押して点灯させると、下のつまみでマスターガンマを調整できます。ボタン消灯時は、つまみは働きません。

### ②₇ DETAIL ENB（ディテイル イネーブル）ボタンとDETAIL（ディテイル）調整つまみ

ボタンを押して点灯させると、下のつまみでディテイルを調整できます。ボタン消灯時は、つまみは働きません。

## 1-2-9. ペインティングブロック



### ② ABSOLUTE（絶対値モード）ボタン

押して点灯させると、WHITE調整つまみ⑨とBLACK調整つまみ⑩の働きが、相対値モードから絶対値モードに切り換わり、それぞれホワイトバランス、ブラックバランスが、つまみのインデックス（▲）が指す通りの値に調整されます。（絶対値モード、相対値モードについては、1-22 (J) ページの脚注を参照してください。）

### ⑨ WHITE（ホワイトバランス）調整つまみ

ホワイトバランス手動調整用のつまみで、左から順にR、G、B信号を調整します。オートホワイトバランス実行後のペインティング用に使うことができます。

つまみの中央にクリックがあります。

これらのつまみの調整モードは、ABSOLUTEボタン⑧の点灯時は絶対値モード、消灯時は相対値モードになります。（1-22 (J) ページの脚注参照）

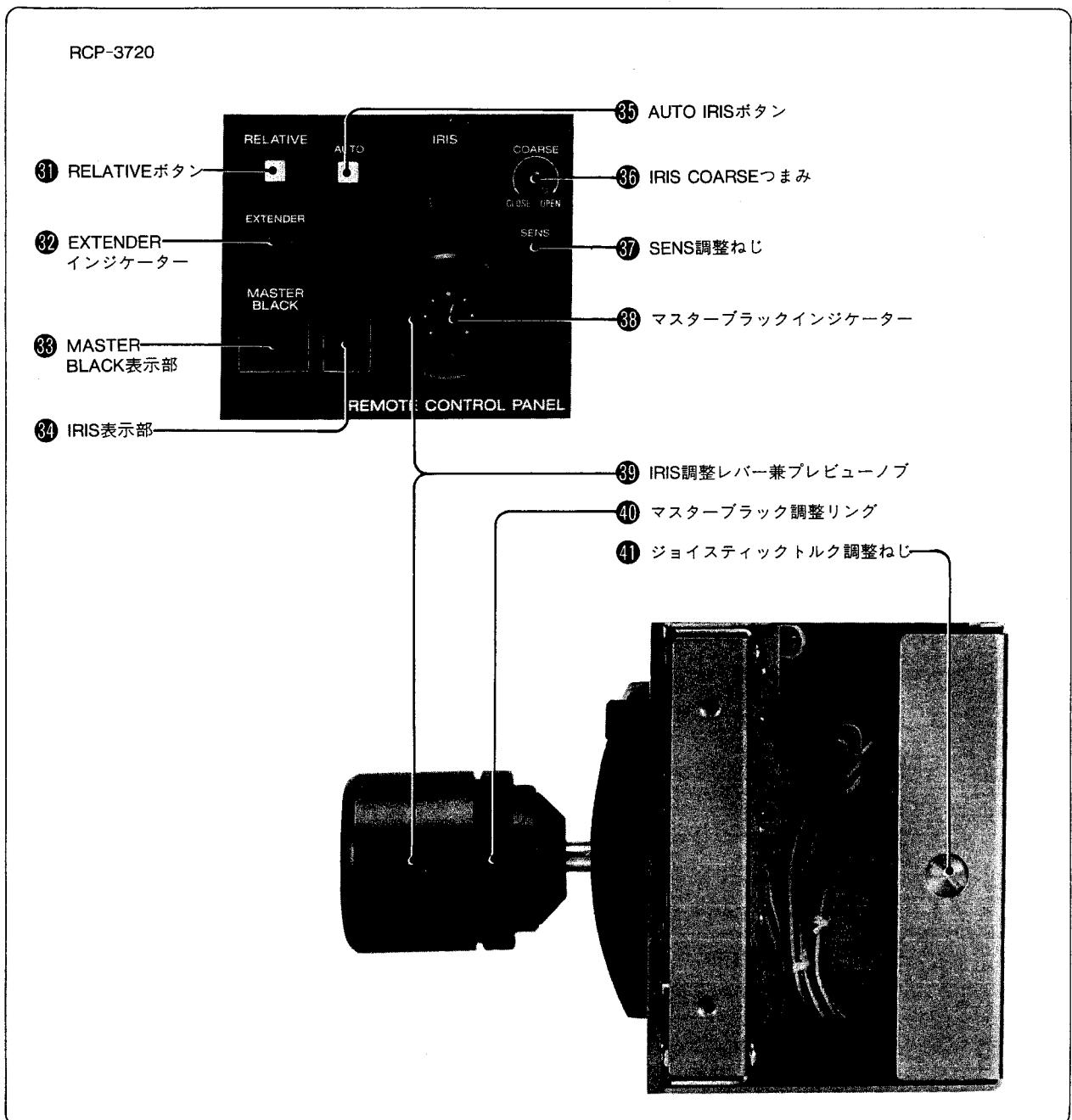
### ⑩ BLACK（ブラックバランス）調整つまみ

ブラックバランス手動調整用のつまみで、左から順にR、G、B信号を調整します。オートブラックバランス実行後のペインティング用に使うことができます。

つまみの中央にクリックがあります。

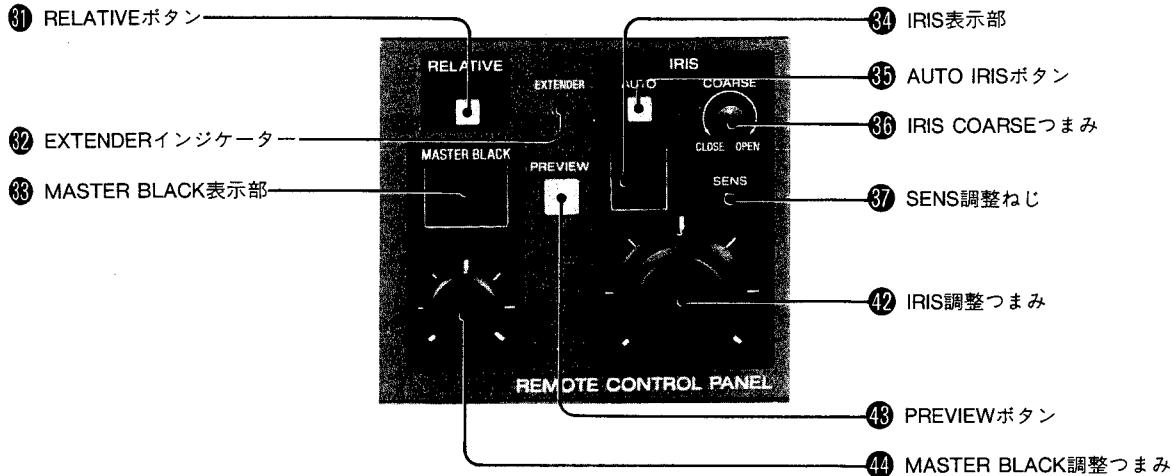
これらのつまみの調整モードは、ABSOLUTEボタン⑧の点灯時は絶対値モード、消灯時は相対値モードになります。（1-22 (J) ページの脚注参照）

## 1-2-10. アイリス/マスター・ブラック調整ブロック





RCP-3721



### ③① RELATIVE（相対値モード）ボタン

押して点灯させると、RCP-3720の場合はIRIS調整レバー⑨とマスターブラック調整リング⑩、RCP-3721の場合はIRIS調整つまみ⑫とMASTER BLACK調整つまみ⑭の働きが、絶対値モードから相対値モードに切り換わります。(1-24 (J) ページ参照)

### ③② EXTENDER（レンズエクステンダー）インジケーター（ニはく色）

レンズエクステンダーを使用しているとき点灯します。

### ③③ MASTER BLACK（マスターブラック）表示部

マスターブラックの調整値を、パーセントで表示します。

マスターブラック調整リング⑩ (RCP-3720) またはMASTER BLACK調整つまみ⑭ (RCP-3721) が絶対値モードにあるとき (RELATIVEボタン③消灯時) は、リングまたはつまみの位置に対応した値を表示します。

リングまたはつまみが相対値モードにあるとき (RELATIVEボタン点灯時) にシーンファイルを呼び出すと、呼び出し時のリングまたはつまみの位置に関係なく、ファイルに保管されているマスターブラック値を表示します。

### ③④ IRIS（アイリス）表示部

絞りの設定値を 1 ナンバーで表示します。レンズを絞り切ると、「CL」と表示されます。

### ⑤ AUTO IRIS (自動レンズ絞り) ボタン

押して点灯させると、レンズの絞りが自動調整されます。入力光に応じて自動的に絞りが調整され、基準の明るさの映像が得られます。ボタン点灯時にIRIS調整レバー⑩ (RCP-3720) またはIRIS調整つまみ⑪ (RCP-3721) を動かすと、自動調整の基準値を±1Fの範囲で変えることができます（中央が標準値）。

もう一度押して消灯させると、IRIS調整レバーまたはIRIS調整つまみで絞りを手動調整することができます。

### ⑥ IRIS COARSE (アイリス粗調整) つまみ

レンズの絞りを粗調整するためのつまみです。

### ⑦ SENS (アイリス微調整感度) 調整ねじ

IRIS調整レバー⑩ (RCP-3720) またはIRIS調整つまみ⑪ (RCP-3721) で手動調整できる絞りの可変範囲を設定します。ドライバーで回して調整します。右へ回すと感度が上がり、絞り調整の可変範囲が狭くなります。

### ⑧ マスターBLACKインジケーター (RCP-3720)

マスターBLACK調整リング⑩を回すと一緒に回転し、マスターBLACKのおおよその調整値を示します。ただし、RELATIVEボタン⑪が点灯しているときは、このインジケーターの位置とマスターBLACK値との対応関係はなくなります。

### ⑨ IRIS (アイリス) 調整レバー兼プレビューノブ (RCP-3720)

AUTO IRISボタン⑤の消灯時に、このレバーを前後に動かして絞りを手動調整することができます。（調整範囲の中心はIRIS COARSEつまみ⑥で、幅はSENS調整ねじ⑦で調整することができます。）

AUTO IRISボタン点灯時は、このレバーで絞り自動調整の基準値を±1Fの範囲で調整できます。

RELATIVEボタン⑪の点灯時は、このレバーは相対値モードで働きます。（1-24 (J) ページ参照）

レバー（ノブ）を軸方向に押すと、プレビュー用キー信号がPREVIEWコネクター（「1-2-11」参照）から出力され、本機でコントロールしているカメラの映像信号がモニターに表示されます。



#### ④⁹ マスターブラック調整リング (RCP-3720)

マスターブラック手動調整用のリングです。リングを回すとマスターブラックインジケーター⑩も一緒に回転し、およその調整値を示します。

RELATIVEボタン⑪の点灯時は、このリングは相対値モードで働きます。(1-24 (J) ページ参照)

#### ④¹⁰ ジョイスティックトルク調整ねじ (RCP-3720)

IRIS調整レバー⑬を前後に動かすときのレバーの動きの固さを、ドライバーで調整します。右に回すとレバーの動きが固くなります。

#### ④¹¹ IRIS (アイリス) 調整つまみ (RCP-3721)

AUTO IRISボタン⑭の消灯時に、このつまみを回して絞りを微調整することができます。

(調整範囲の中心はIRIS COARSEつまみ⑮で、幅はSENS調整ねじ⑯で調整することができます。)

AUTO IRISボタン点灯時は、このつまみで絞り自動調整の基準値を±1Fの範囲で調整できます。

RELATIVEボタン⑪の点灯時は、このレバーは相対値モードで働きます。(1-24 (J) ページ参照)。

#### ④¹² PREVIEW (プレビュー) ボタン (RCP-3721)

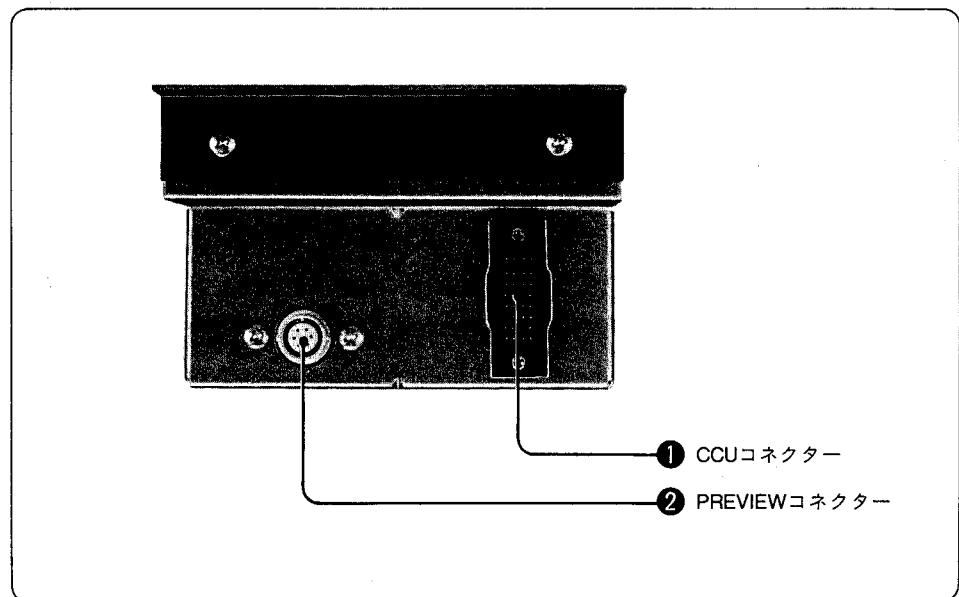
押して点灯させると、プレビュー用キー信号がPREVIEWコネクター(「1-2-11」参照)から出力され、本機でコントロールしているカメラの映像信号がモニターに表示されます。

#### ④¹³ MASTER BLACK (マスターブラック) 調整つまみ (RCP-3721)

マスターブラック手動調整用のつまみです。

RELATIVEボタン⑪の点灯時は、このつまみは相対値モードで働きます。(1-24 (J) ページ参照)

## 1-2-11. コネクターパネル



### ① CCUコネクター (16ピン)

カメラコントロールユニットのRCPコネクター (16ピン) に接続します。本機への電源供給およびコントロール信号の受け渡しが行われます。詳しくは「1-3-1. CCUの接続」を参照してください。

### ② PREVIEW (プレビュー) コネクター

RCP-3720の場合は、プレビューノブ入/切の信号を、外部のビデオスイッチャーなどに出力します。

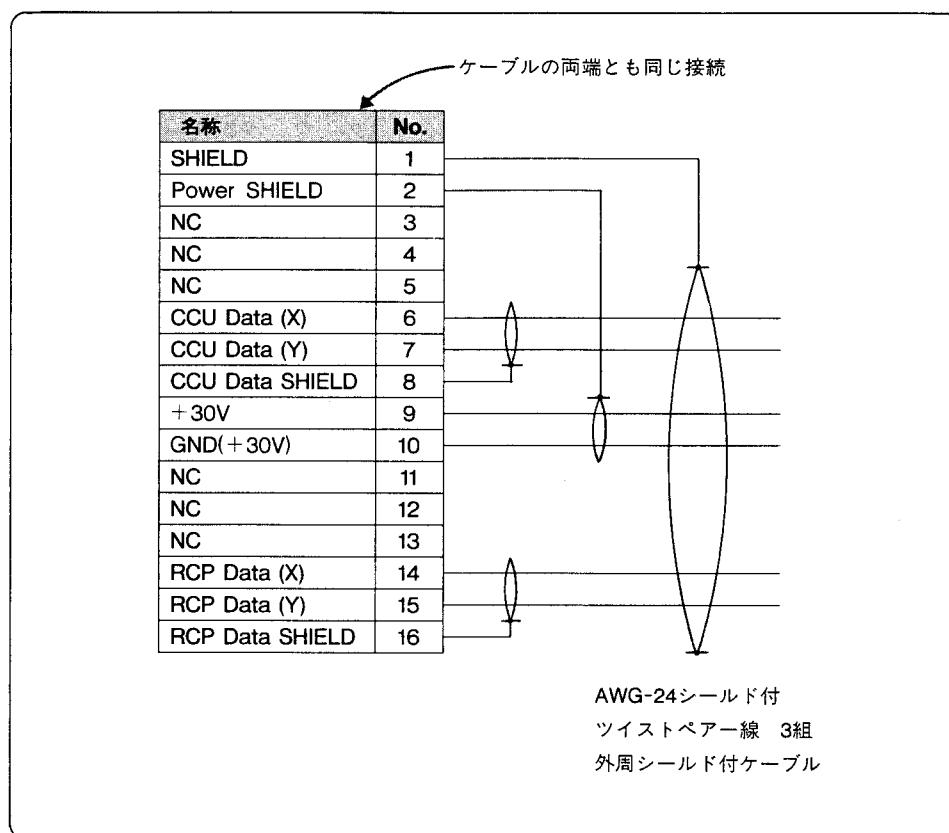
RCP-3721の場合は、PREVIEWボタンのオン/オフ信号の出力とボタン点灯用の電源の入力を、外部のビデオスイッチャーなどとの間で行います。

詳しくは「1-3-2. プレビューコネクター」を参照してください。

## 1-3. 接続

### 1-3-1. CCUの接続

カメラコントロールユニットと本機の接続には、別売りのカメラ接続ケーブルCCA-2-30（長さ30m）を使用します。これ以外のケーブル（ただしCCA-2相当）をお使いになるときは、付属の16ピンコネクターを使って、下図のように配線してください（長さは200mを超えないようにしてください）。

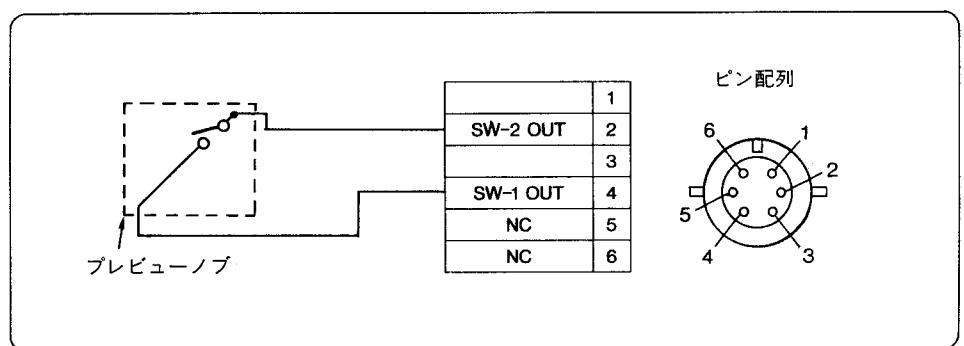


### 1-3-2. プレビュー コネクター

PREVIEWコネクターは下図のように配線されており、外部のビデオスイッチャーなどをコントロールできます。

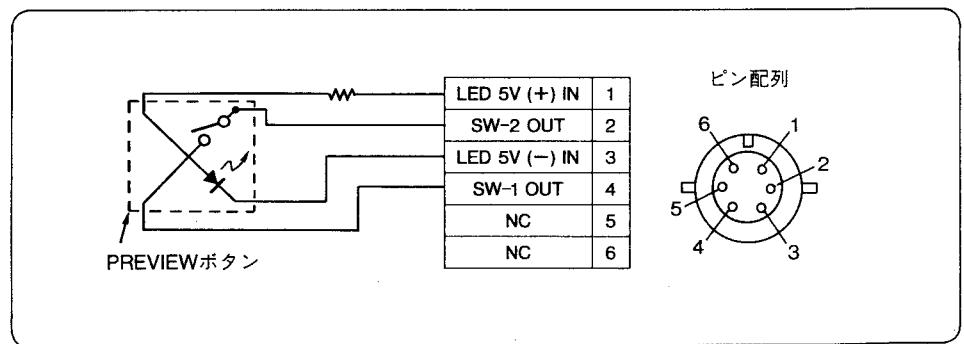
#### RCP-3720

プレビューノブ用SWの最大電流は1mAです。



#### RCP-3721

PREVIEWボタン用の電源は5V、SWの最大電流は1mAです。



## 1-4. 操作

本機を使ってカメラシステムをコントロールするには、PANEL ACTIVEボタンを押して点灯させます。

PANEL ACTIVEボタン、PARAボタンの状態と操作可能なブロックの関係は次の通りです。

ボタンの状態		操作可能なブロック
PANEL ACTIVE	PARA	
点灯	点灯	全ブロック (PARAボタンも含む) *
	点滅	アイリス/マスター・ブラック調整ブロックのみ
	消灯	全ブロック (PARAボタンを除く) *
消灯	点灯	PANEL ACTIVE、LOCK、RELATIVEボタンのみ**
	点滅	
	消灯	

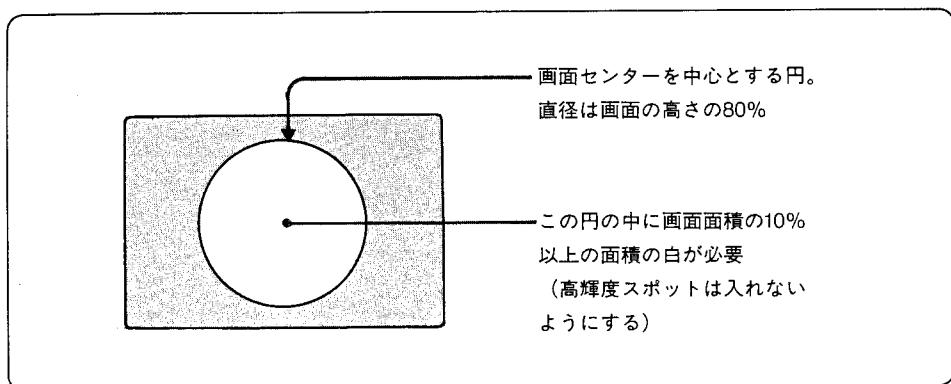
\* LOCKボタン点灯時は、アイリス/マスター・ブラック調整ブロックとLOCKボタン以外は働きません。LOCKボタンを押して消灯させると、他のブロックも操作可能になります。

\*\*LOCKボタン点灯時は、PANEL ACTIVEボタンは働きません。LOCKボタンを押して消灯させると、PANEL ACTIVEボタンも働くようになります。

### 1-4-1. ホワイトバランスとブラックバランスの自動調整

ホワイトバランスとブラックバランスの自動調整は、下記の手順で行います。

- 1 AUTO IRISボタンを押して点灯させ、絞りを自動調整モードにします。
- 2 WHITEとBLACKの調整つまみをすべて中央位置にします。\*
- 3 被写体を照らす光源に合わせ、CC FILTER切り換えボタンで色温度変換フィルターを選びます。
- 4 必要に応じて、ND FILTER切り換えボタンでNDフィルターを切り替えます。
- 5 ホワイトパターンを写します。白いもの（白い紙、白い壁など）で代用することもできます。



- 6 WHITE自動調整ボタンを押して点灯させ、ホワイトバランスを調整します。  
調整が完了するとボタンが消灯します。\*\*
- 7 BLACK自動調整ボタンを押して点灯させ、ブラックバランスを調整します。  
調整が完了するとボタンが消灯します。\*\*

\* 手順2を省略しても、ホワイト/ブラックバランスは自動的に調整されます。ただし自動調整後は、これらのつまみの動きは絶対値モードになります。つまり、中央位置は必ずしも調整範囲の中央値に対応せず、自動調整時の位置が、その後のペインティングなど手動調整の基準位置になります。したがって、中央位置を自動調整後の基準位置にしたいときは、手順2を実行してください。

なお、自動調整後も、ABSOLUTEボタンを押して点灯させれば、つまみの動きは絶対値モードに変わり、中央位置が調整範囲の中央値に対応するようになります。

\*\*調整中にエラーが発生した場合は、ボタンが点滅して知らせます。点滅を止めるには、本機のいずれかのボタンを押します。



## 1-4-2. 絞りの調整

レンズの絞りは、AUTO IRISボタンを押して点灯させておくと自動的に調整されますが、必要に応じて手動で調整することもできます。

### 自動調整

- 1 IRIS調整レバー (RCP-3720) またはIRIS調整つまみ (RCP-3721) を中央の位置にします。
- 2 AUTO IRISボタンを押して点灯させます。  
絞りは入力光に応じて自動的に最適値に調整されます。
  - AUTO IRISボタンが点灯し、絞りが自動調整になっているとき、IRIS調整レバーまたはIRIS調整つまみを動かすと、自動調整の基準値を±1Fの範囲で変えることができます。

### 手動調整

#### 調整範囲の設定

- 1 AUTO IRISボタンが点灯しているときは、ボタンを押して消灯させます。
- 2 IRIS調整レバー (RCP-3720) またはIRIS調整つまみ (RCP-3721) を中央の位置にします。
- 3 IRIS COARSEつまみで、IRIS調整レバーまたはIRIS調整つまみによる調整範囲の中心値を設定します。
- 4 RCP-3720の場合はIRIS調整レバーを前後いっぱいに動かし、RCP-3721の場合はIRIS調整つまみを左右いっぱいに回して、絞りの調整範囲を確認します。  
調整範囲を変更したいときは、ドライバーでSENS調整ねじを回して調整します(右へ回すと感度が上がり、調整範囲が狭くなります)。

#### 調整

IRIS調整レバーまたはIRIS調整つまみを動かして、最適な映像が得られるように絞りを調整します。

#### 絶対値モードと相対値モードについて

IRIS調整レバー (RCP-3720)、IRIS調整つまみ (RCP-3721) の働きは、RELATIVEボタン消灯時は絶対値モード、点灯時は相対値モードになります。マスターBLACK調整リンク (RCP-3720)、MASTER BLACK調整つまみ (RCP-3721) も同様です。

絶対値モードでは、レバーやつまみの位置が調整項目の値と絶対的に対応しており、中央位置がそのまま調整範囲の中央値に対応します。

一方、相対値モードでは、レバーやつまみの位置と調整値との絶対的な対応関係がなくなります。すなわち、中央位置は必ずしも調整範囲の中央値に対応せず、絶対値モードから相対値モードに切り換わるときの位置が、その後の相対値調整の基準位置になります。

AUTO IRISボタンを押して消灯させ、絞りを自動調整から手動調整に切り換えるときに、RELATIVEボタンが消灯していると(絶対値モード)、絞りは瞬間に、そのときのIRIS調整レバー (RCP-3720)、IRIS調整つまみ (RCP-3721) の位置に対応する値に変わります。したがって、切り換え時のレバー(つまみ)の位置によっては、映像の明るさが大きく変化することがあります。

AUTO IRISボタン点灯中にRELATIVEボタンを押して点灯させておくと(相対値モード)、手動調整に切り換えても直前の自動調整値が保持されるため、上記の現象を避けることができます。

#### **1-4-3. シーンファイル操作**

撮影シーンに合わせた調整値などのデータを、シーンファイルとして最大5種類(ファイル1~5) カメラヘッドに保管しておき、必要に応じて任意のファイルを呼び出し、使用することができます。

シーンファイルに保管できるデータは次の通りです。

- NDフィルターの設定
- 色温度変換フィルターの設定
- マスターゲイン設定値
- シャッタースピード設定値
- オートニーアイリス回路のオン/オフ状態
- ニーポイント設定値
- ガンマ設定値
- ディテイル設定値
- ホワイトバランス設定値
- ブラックバランス設定値
- オートアイリス回路のオン/オフ状態
- マスターBLACK設定値



## 保管の手順

- 1** 撮影シーンに合わせて、必要な項目を調整します。
- 2** STOREボタンを押して点滅させます。
- 3** 調整値を保管しておくシーンファイルの番号を、ファイル番号選択ボタンで指定します。

押したボタンが点灯し、指定したファイルに調整値が登録されます。登録が完了すると、点滅していたSTOREボタンは消灯しますが、ファイル番号選択ボタンは点灯し続けます。

- ・すでにデータが登録されているファイルを指定すると、前のデータが消えて新しいデータが登録されます。

## シーンファイルの呼び出し

- 1** WHITE調整つまみとBLACK調整つまみをすべて中央位置にします。\*
- 2** 使用したいファイルの番号を、ファイル番号選択ボタンで指定します。

押したボタンが点灯し、指定したファイルのデータが呼び出されます。

- ・点灯しているファイル選択番号を押して消灯させると、カメラシステムはファイルが呼び出される前の状態に戻ります。

\* 手順1を実行しなくてもファイルは呼び出せますが、呼び出し後これらのつまみの調整モードは相対値モードになるため、中央位置を調整の基準位置にしたいときは手順1を実行してください。(1-22 (J) ページの脚注も併せて参照してください。)

## 1-5. 仕様

入出力コネクター	CCUコネクター (16ピン) PREVIEWコネクター (6ピン)
電源	DC 30V
消費電力	4W
最大ケーブル長	200m (CCA-2ケーブルまたは同等品使用の場合)
重さ	RCP-3720: 1.7kg RCP-3721: 1.4kg
外形寸法 (幅/高さ/奥行き)	RCP-3720: 102×354×127mm RCP-3721: 102×354×84mm (最大突起部を含む)
付属品	16ピンコネクター (2) 6ピンコネクター (1) ナンバープレート (1式) オペレーション アンド メンテナンスマニュアル (1)
別売りアクセサリー	カメラ接続ケーブル (CCA-2-30)

本機の仕様および外観は、改良のため予告なく変更することがあります、ご了承ください。

# Section 1. Operation

## 1-1. Overview

The RCP-3720/3721 remote control panel is designed for remote control of those functions of the BVP-370/370P/270/270P 3-chip CCD color video camera which are used most frequently in basic operation. The panel is to be connected to the CCU-370/370P camera control unit by a special cable with a length of up to 200 m, and control the camera functions via the camera control unit.

The RCP-3720 and RCP-3721 are completely identical in their functions. In terms of operation they differ only with respect to the type of knob for iris and master black adjustments: while the RCP-3720 uses a joystick type control for these adjustments, the RCP-3721 uses rotary knobs. The principal features of the RCP-3720/3721 are as follows:

### **Optimal control parts arrangement for basic camera operation**

This remote control panel is provided with all necessary control functions for basic operation of the BVP-370/370P/270/270P video camera. The controls such as buttons and knobs are arranged on the panel according to function with consideration given to the frequencies at which they are used. The buttons blink or light up in such a way that the operator is smoothly guided to follow the correct operating procedure. In addition, those buttons which, if pressed by mistake, might seriously affect the camera operation or setup are each protected with a guard frame. This and other features ensure easy and error-free operation of many different functions.

### **Scene file function**

Camera adjustment and control data such as painting data for a particular scene can be stored in the camera head in the form of a scene file. The stored data can easily be recalled at any time to automatically adjust the video camera to the shooting condition for that particular scene. This panel enables up to five scene files to be created and handled.

### **Shutter speed control**

The electronic shutter speed of the CCD camera can be varied through a range of six speeds.

### **Signal transmission via digital line**

Between this remote control panel and the camera control unit, signals are digitally transmitted via a single connection cable (CCA-2-30), ensuring reliable signal transmission.

### **Concurrently operable with a master setup unit**

This panel can be operated concurrently with an MSU-350 master setup unit. Concurrent control of the camera system by this panel and the master setup unit can be possible in two modes: a parallel, and a split mode. In the parallel mode, all functions of this panel are effective while in the split mode it is only iris and master black adjustment that can be performed from this panel. (These two items cannot be adjusted from the master setup unit whether in the parallel or split mode.)

**Betacam camera control**

When connected to the CCU-350/350P/355/355P camera control unit, the panel can be used to control a Betacam-series camera (such as BVP-7/7P/50/50P/70/70P/7000HS/7000HSP) attached with a camera adaptor.

**Four units mountable on 19-inch rack**

Up to four units of this remote control panel can be mounted on a 19-inch EIA standard rack (seven rack units high).

This remote control panel is designed for exclusive use with CCD color video cameras. It cannot be used to control video cameras with tube type pickup device.

## 1-2. Locations and Functions of Parts and Controls

RCP-3720

Power supply and signal selector block (See 1-2-1.)

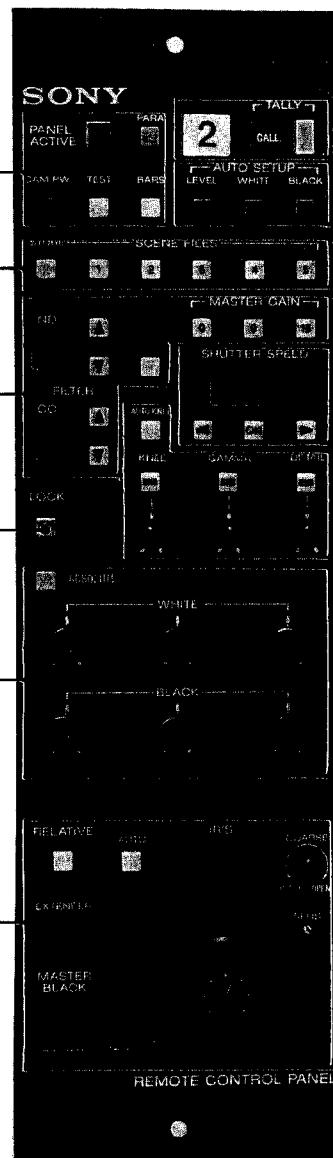
Scene file block (See 1-2-4.)

Filter and master gain selector block (See 1-2-5.)

LOCK button (See 1-2-7.)

Painting block (See 1-2-9.)

Iris and master black adjustment block (See 1-2-10.)



Tally block (See 1-2-2.)

Auto setup block (See 1-2-3.)

Shutter speed selector block (See 1-2-6.)

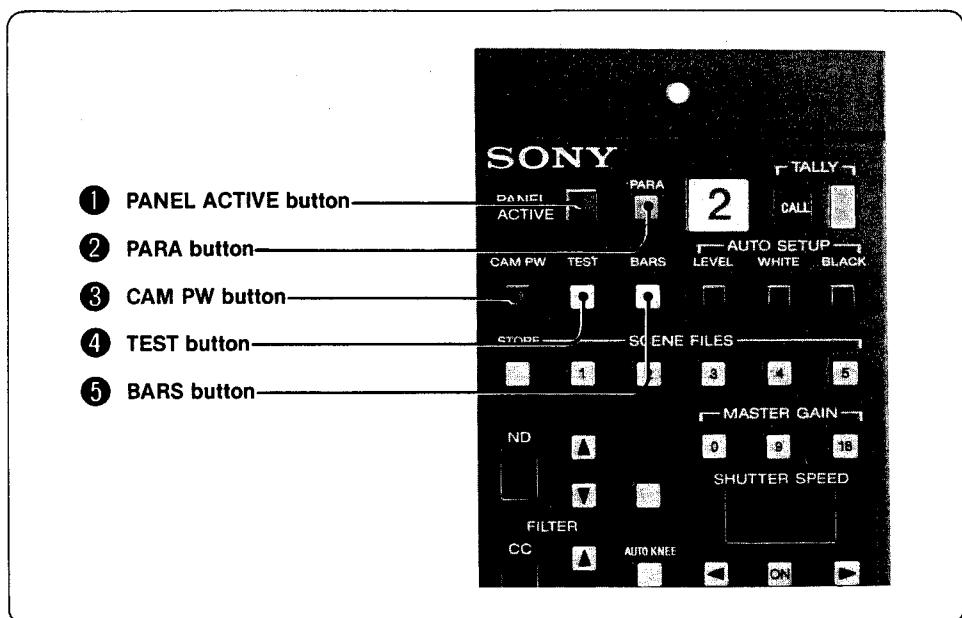
Knee, gamma and detail adjustment block (See 1-2-8.)

RCP-3721

Iris and master black adjustment block (See 1-2-10.)



### **1.2.1. Power Supply and Signal Selector Block**



## ① PANEL ACTIVE button

When this button is pressed, it lights and makes it possible to control the camera system from this remote control panel. When the button is unlit, the camera system cannot be controlled from the panel. However, even with the button unlit, the function of the panel to indicate the current condition of the camera system is effective.

## ② PARA (parallel mode) button

**PARALLEL MODE** button  
When lit, this button indicates that this panel and a master setup unit connected to the same camera system are in the parallel control mode (namely, that you can use all functions of this panel).

When blinking, it indicates that the two units are in the split control mode (namely, that it is only iris and master black adjustment which can be performed from this panel).

When the PARA button is lit, you can make the panel exit from the parallel control mode by pressing the button to turn it off. However, when the button is blinking, you cannot make the panel exit from the split control mode: pressing the button will result in no change.

### ③ CAM PW (camera head power) button

**CAM PW (camera head power) button**  
When this button is pressed, it lights and power is supplied to the camera head.  
To cut off the camera head power supply, press the button again to make it go out.

#### ④ TEST button

**TEST button:** When this button is pressed, it lights and causes the test signal generator in the camera head to output the video circuit testing signal of sawtooth waveform.

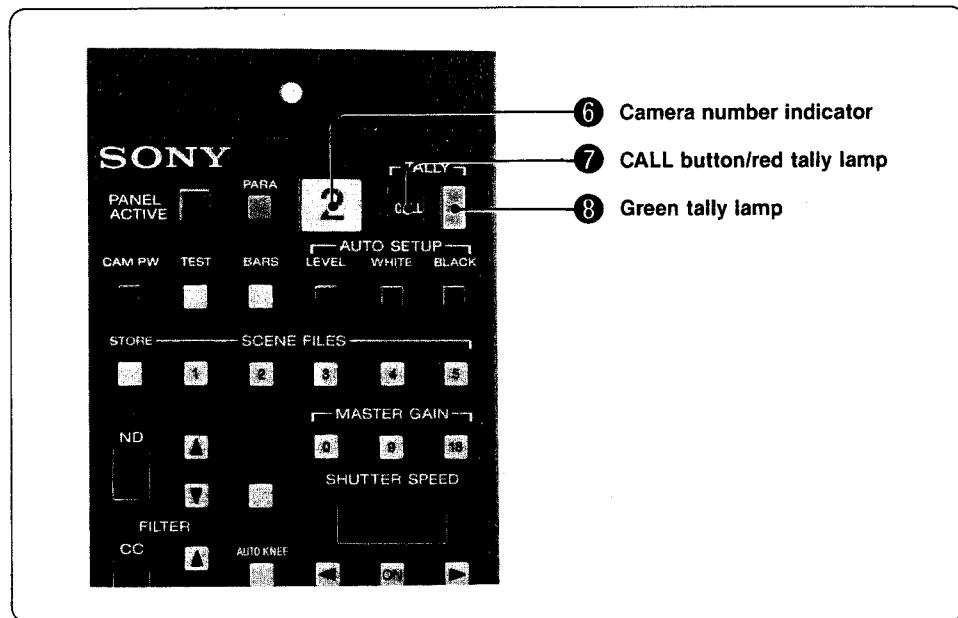
To turn off the test signal generator, press this button again to make it go out.

## ⑤ BARS button

**BARS button**  
When this button is pressed, it lights and causes the color bar signal to be output. To cut off the color bar signal, press this button again to make it go out.

To cut off the color bar signal, press this button again to make it go back on.

## 1-2-2. Tally Block



**⑥ Camera number indicator**

Attach the number plate (supplied) corresponding to the number of the camera which is to be controlled from this panel.

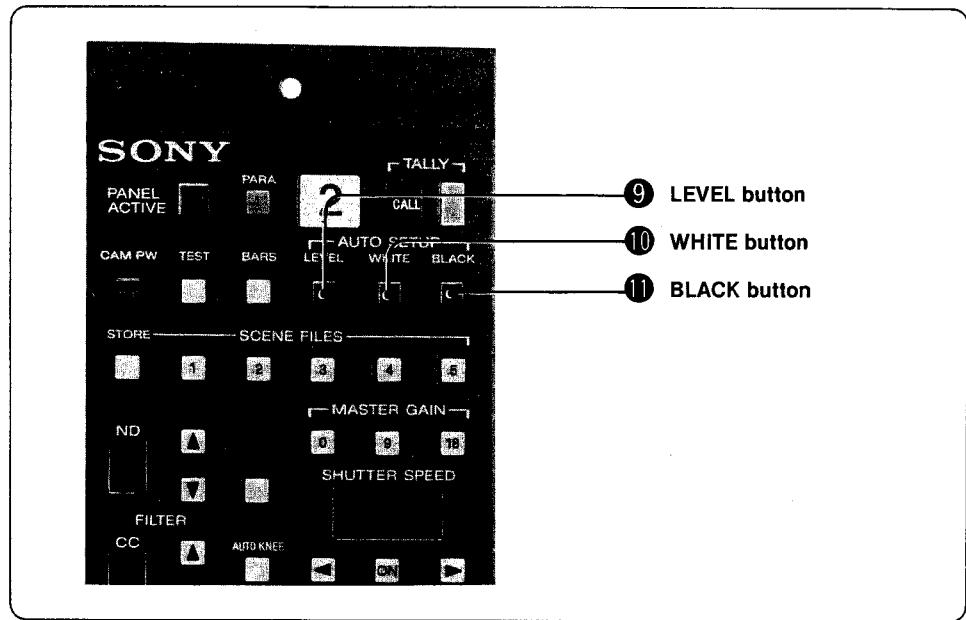
**⑦ CALL button/red tally lamp**

While the button is pressed, a call signal is transmitted to the camera head and the camera control unit, keeping their red tally lamps lit. The button also works as a red tally lamp: it lights when a red tally signal is input to the camera.

**⑧ Green tally lamp**

This lamp lights when a green tally signal is input to the camera.

## 1-2-3. Auto Setup Block



### ⑨ LEVEL button

When this button is pressed, it lights and gamma balance, knee point and master black level are automatically adjusted. It goes out upon completion of the automatic adjustment.

If an error occurs during the automatic adjustment, this button starts blinking. To stop it from blinking, press any button on the panel.

### ⑩ WHITE button

When this button is pressed, it lights and white balance is automatically adjusted. It goes out upon completion of the automatic adjustment.

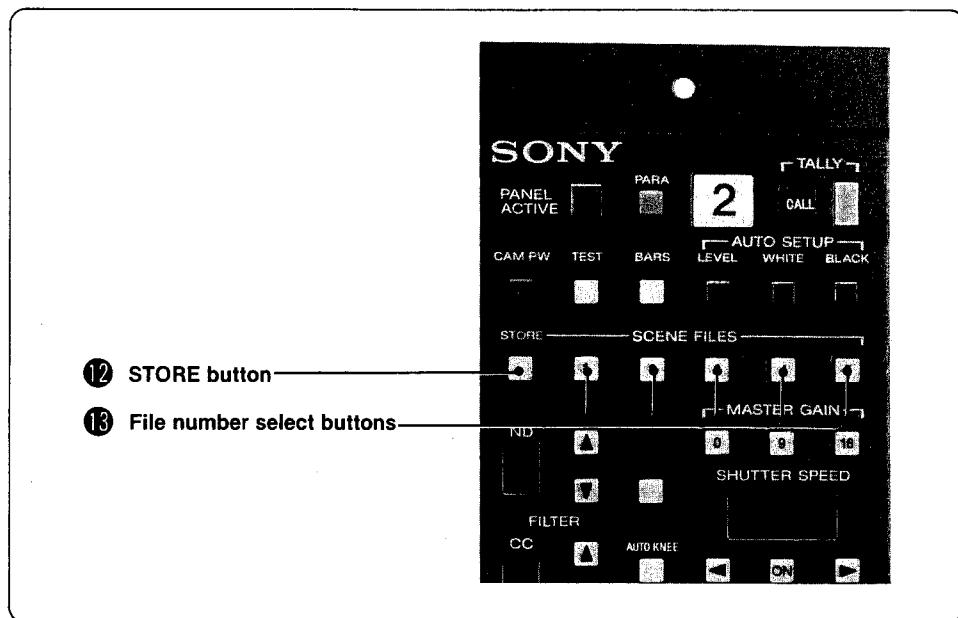
If an error occurs during the automatic adjustment, this button starts blinking. To stop it from blinking, press any button on the panel.

### ⑪ BLACK button

When this button is pressed, it lights and black balance and black set are automatically adjusted. It goes out upon completion of the automatic adjustment.

If an error occurs during the automatic adjustment, this button starts blinking. To stop it from blinking, press any button on the panel.

## 1-2-4. Scene File Block



### ⑫ STORE button

When this button is pressed, it starts blinking and makes it possible to store the current camera adjustment data in a scene file to be selected by pressing one of the file number select buttons ⑬. The STORE button stops blinking on completion of data storing.

To cancel data storing, press the button again to stop it from blinking before pressing a file number select button.

### ⑬ File number select buttons

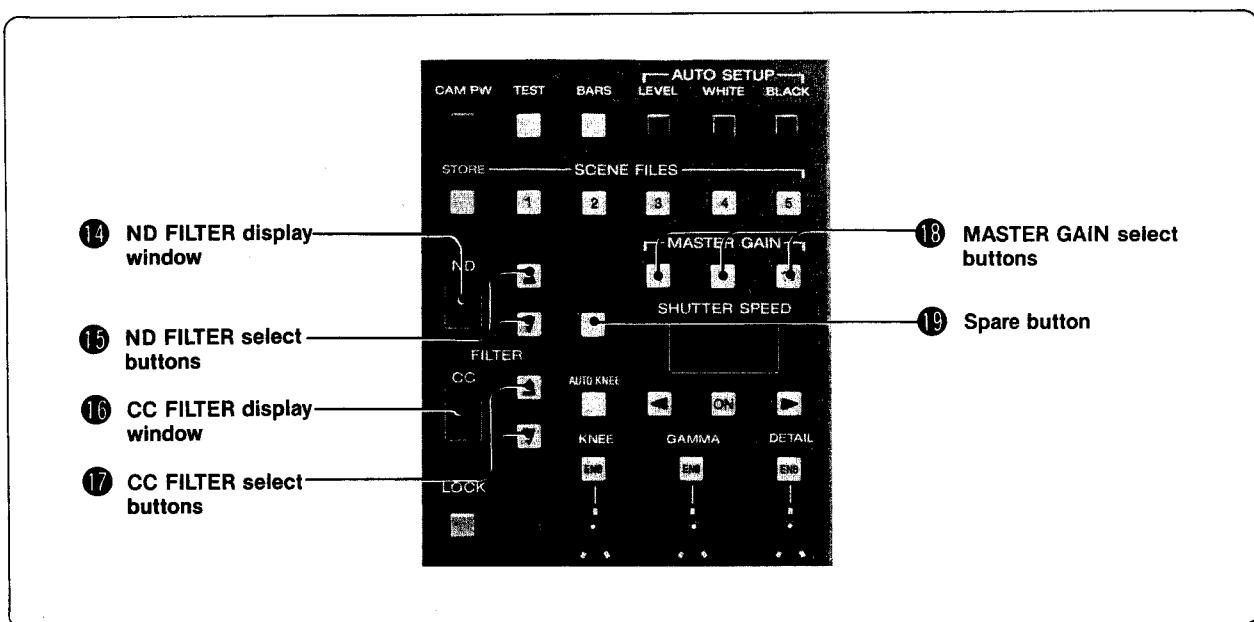
**When the STORE button ⑫ is blinking:**

Pressing one of these buttons causes it to light and the current camera adjustment data to be stored in the scene file of the corresponding number.

**When the STORE button ⑫ is unlit:**

- Pressing one of these buttons causes it to light, the stored camera adjustment data to be recalled from the scene file of the corresponding number and the camera to be automatically adjusted according to the recalled scene file data.
- Pressing the lit one of these buttons causes it to go out and the camera system to return to the status it was in before the adjustment data was recalled from the scene file of the corresponding number.

## 1-2-5. Filter and Master Gain Selector Block



### ⑭ ND FILTER display window

This display window indicates the current ND filter selection. When this panel is used to control the BVP-370/370P/270/270P camera system, the numbers which are displayed here and the ND filter selections correspond as follows:

- 1: Clear
- 2: 1/4 ND
- 3: 1/8 ND
- 4: 1/16 ND

### ⑮ ND FILTER select buttons

Once either button is pressed, both buttons (and also the CC FILTER select buttons ⑯) light up.

Every time one or the other ND FILTER select button is pressed while lit, the ND filter selection changes as shown below. (If the button is kept pressed, the filter selection continues to change.)

▲:

▼:

### ⑯ CC (color temperature conversion) FILTER display window

This display window indicates the current CC filter selection. When this panel is used to control the BVP-370/370P/270/270P camera system, the letters which are displayed here and the ND filter selections correspond as follows:

- A : Special filter\*
- B : 3200 K
- C : 4300 K
- D : 6300 K

\* The special filter installed in the BVP-370/370P/270/270P camera head as shipped is a cross filter. If a different filter is desired as special filter, please contact your authorized Sony dealer.



**⑯ CC (color temperature conversion) FILTER select buttons**

Once either button is pressed, both buttons (and also the ND FILTER select buttons ⑮) light up.

Every time one or the other CC FILTER select button is pressed while lit, the CC filter selection changes as shown below. (If the button is kept pressed, the filter selection continues to change.)

▲: → A → B → C → D →

▼: → D → C → B → A →

**⑰ MASTER GAIN select buttons**

When one of these buttons is pressed, it lights and the corresponding video gain is obtained. Use these buttons to select an appropriate video gain according to the illuminance of the subject which is to be shot.

0: 0 dB

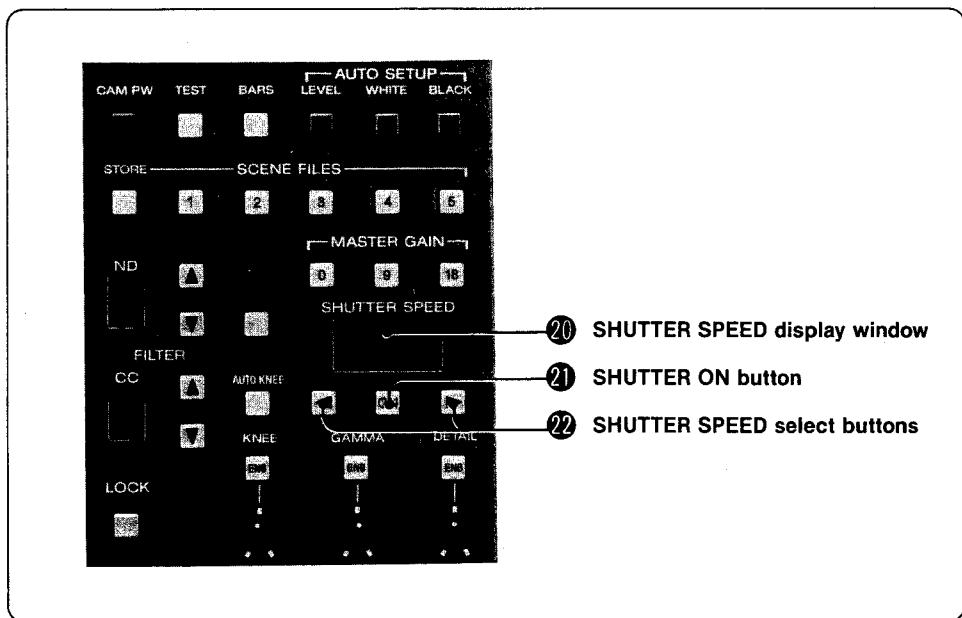
9: 9 dB

18: 18 dB

**⑲ Spare button**

Not used.

## 1-2-6. Shutter Speed Selector Block



### ⑩ SHUTTER SPEED display window

This display window indicates the current selection of shutter speed.

- 100: 1/100 sec for NTSC (60: 1/60 sec for PAL\*)
- 125: 1/125 sec
- 250: 1/250 sec
- 500: 1/500 sec
- 1000: 1/1000 sec
- 2000: 1/2000 sec

\* If your camera system is for the PAL system, it is necessary to change the setting of an internal switch of this panel so that "60" is displayed in place of "100". On how to change the switch setting, see Section 2 of this manual.

### ⑪ SHUTTER ON button

When this button is pressed, it lights and the electronic shutter of the camera starts operating at the currently selected speed (namely the speed indicated in the SHUTTER SPEED display window ⑩).

To stop the shutter operation, press this button again to make it go out.  
When this button is lit, you can change the camera's shutter speed using the SHUTTER SPEED select buttons ⑫.

### ⑫ SHUTTER SPEED select buttons

These buttons light up when the SHUTTER ON button is pressed to light up, and go out when the SHUTTER ON button is pressed again to go out.

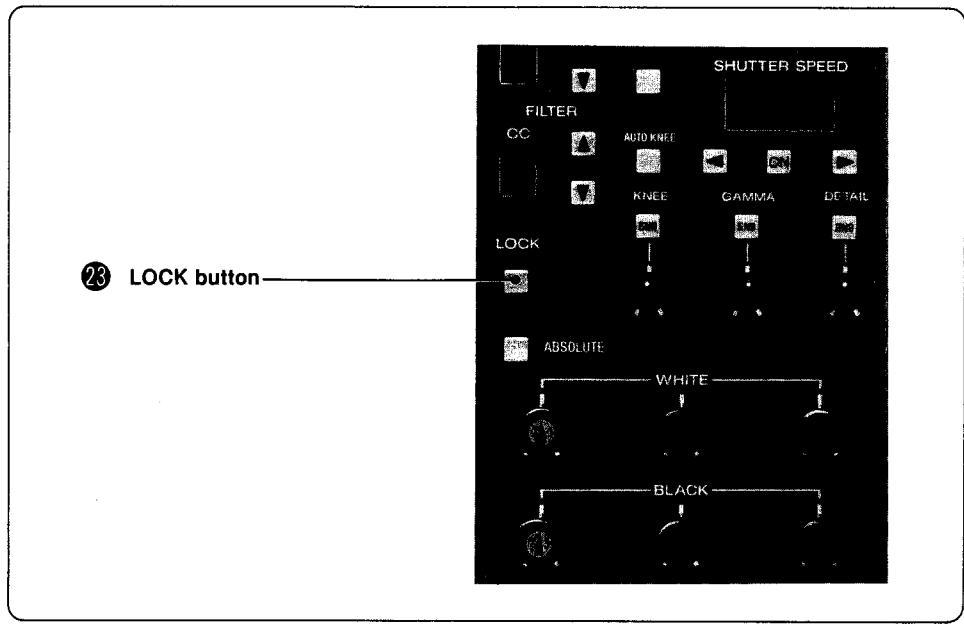
Every time one or the other of these buttons is pressed while it is lit, the camera's shutter speed (in seconds) changes as shown below. (If the button is kept pressed, the shutter speed continues to change.)

►: → 1/100 (NTSC), 1/60 (PAL) → 1/125 → 1/250 → 1/500 → 1/1000 → 1/2000 →

◀: → 1/2000 → 1/1000 → 1/500 → 1/250 → 1/125 → 1/100 (NTSC), 1/60 (PAL) →

When these buttons are unlit, pressing them do not cause the shutter speed to be changed on the part of the camera, only resulting in that the shutter speed selection on the part of this panel is changed (namely, the value of shutter speed indicated in the SHUTTER SPEED display window ⑩ is replaced by a different value.)

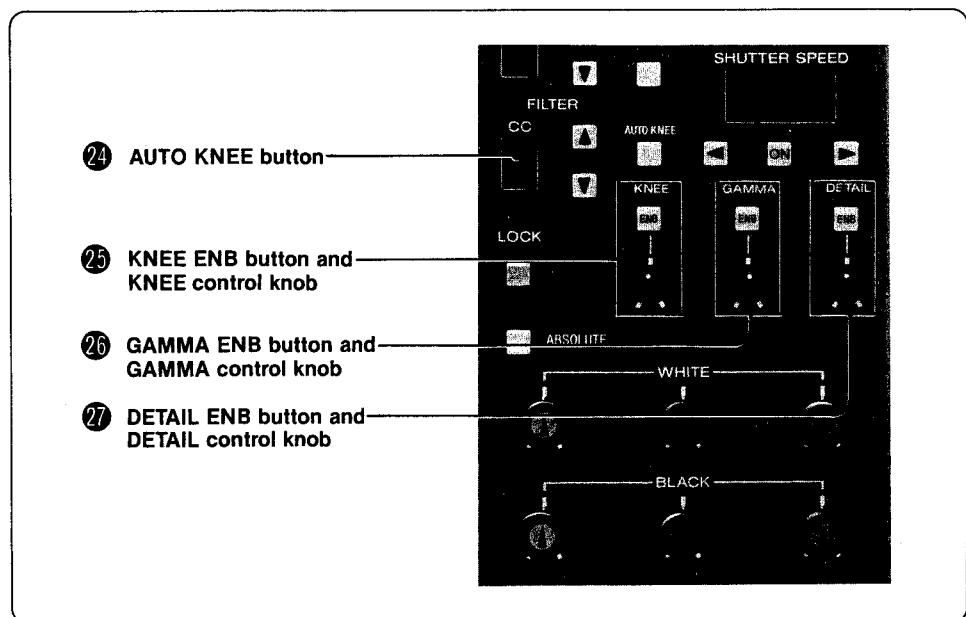
## 1-2-7. LOCK Button



### ②3 LOCK button

When this button is pressed, it lights and all buttons and knobs other than those in the iris and master black adjustment block become inoperative.

## 1.2.8. Knee, Gamma and Detail Adjustment Block



### ②4 AUTO KNEE button

When this button is pressed, it lights and the AUTO KNEE circuit of the camera head is activated. When pressed again, it goes out, causing the AUTO KNEE circuit to be deactivated.

### ②5 KNEE ENB (enable) button and KNEE control knob

When the button is pressed, it lights and makes it possible to adjust the knee point by turning the knob. Pressing the button again makes it go out and the knob inoperative.

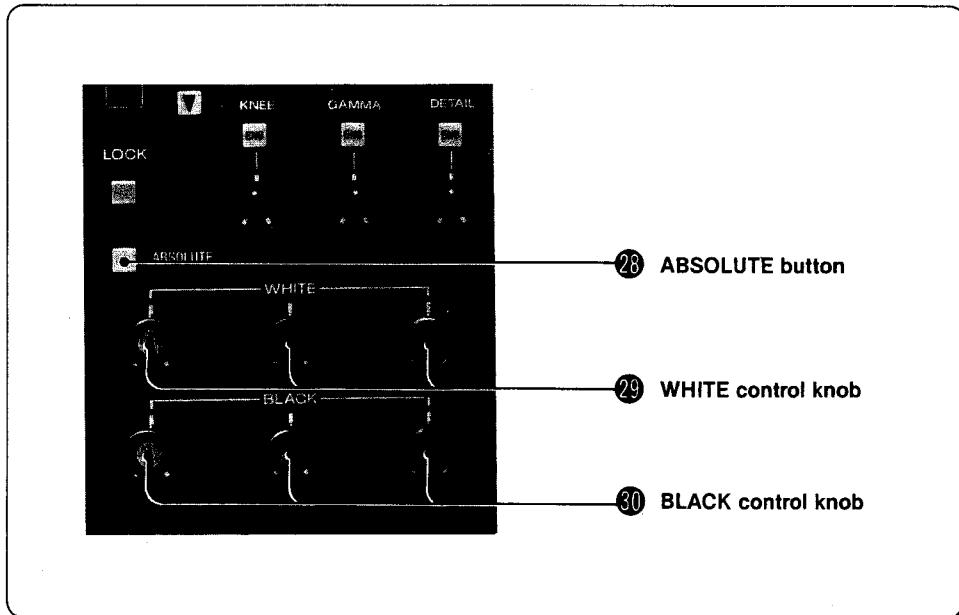
### ②6 GAMMA ENB (enable) button and GAMMA control knob

When the button is pressed, it lights and makes it possible to adjust the master gamma by turning the knob. Pressing the button again makes it go out and the knob inoperative.

### ②7 DETAIL ENB (enable) button and DETAIL control knob

When the button is pressed, it lights and makes it possible to adjust the detail for contour correction by turning the knob. Pressing the button again makes it go out and the knob inoperative.

## 1-2-9. Painting Block



### ②8 ABSOLUTE button

When this button is pressed, it lights and the adjustment mode of the WHITE ②9 and BLACK ③0 control knobs changes from the relative to the absolute mode. In the absolute mode, white balance and black balance are adjusted just as indicated by the indexes (▲) on the top of the WHITE and BLACK control knobs. (For details on the absolute and relative modes, see the footnote indicated by an asterisk on page 1-21(E).)

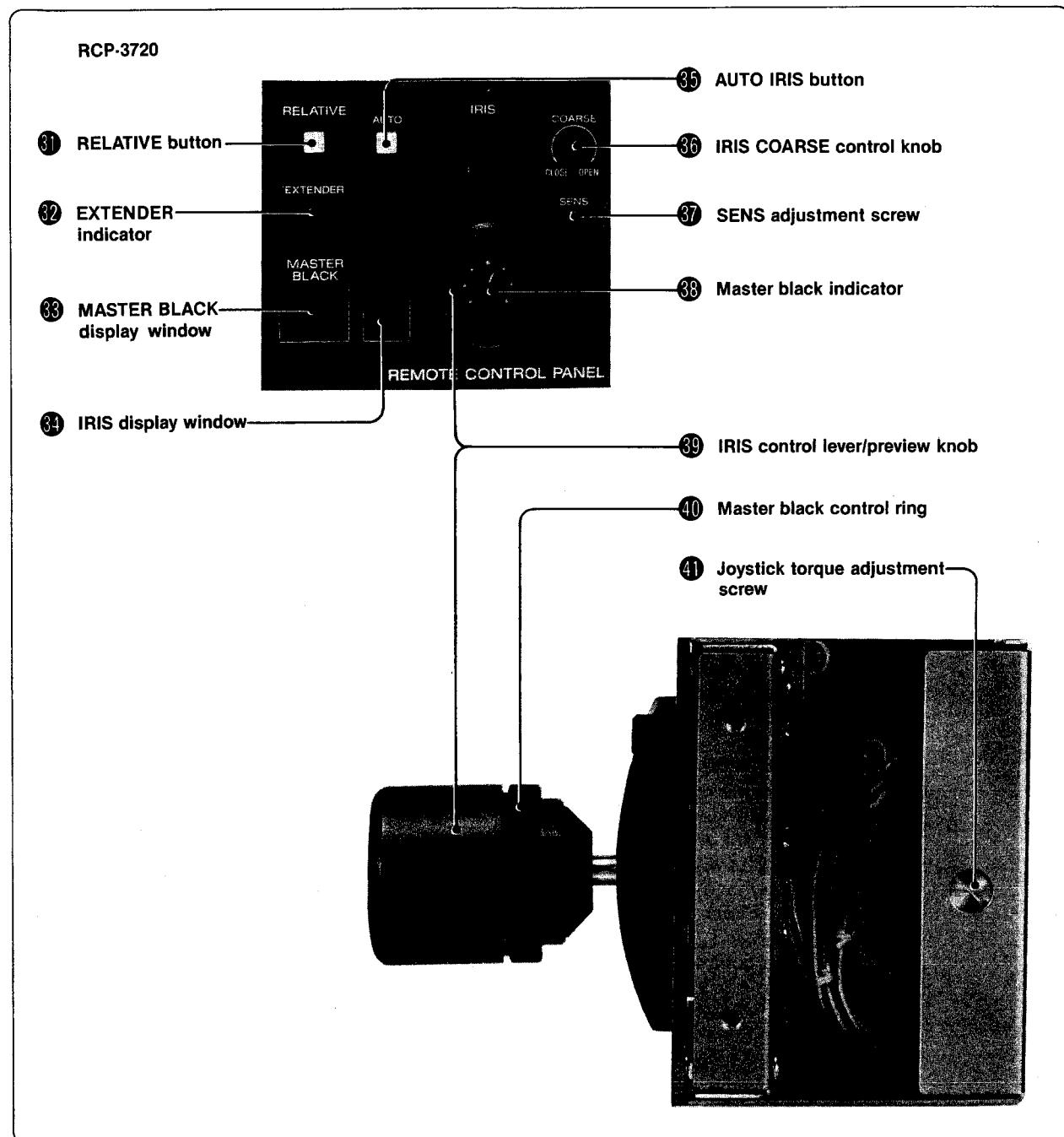
### ②9 WHITE control knobs

Used to manually adjust the white balance in painting for example, after automatic white balance adjustment. From left to right, the knobs are for R, G, and B signal adjustment. A click stop is provided for the central position of each of these knobs. The knobs work in the absolute mode when the ABSOLUTE button is lit, and in the relative mode when the button is unlit. (See the footnote indicated by an asterisk on page 1-21(E).)

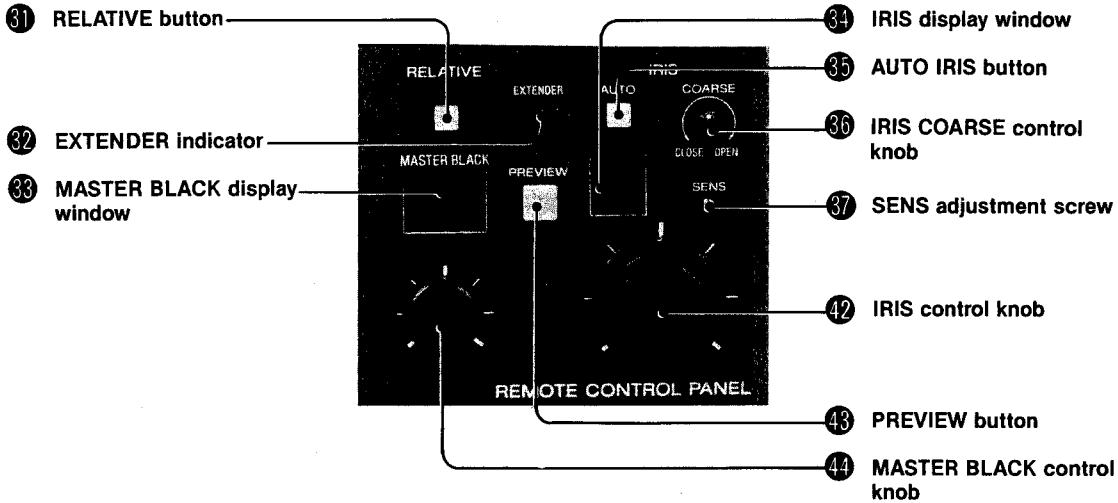
### ③0 BLACK control knobs

Used to manually adjust the black balance in painting for example, after automatic black balance adjustment. From left to right, the knobs are for R, G, and B signal adjustment. A click stop is provided for the central position of each of these knobs. The knobs work in the absolute mode when the ABSOLUTE button is lit, and in the relative mode when the button is unlit. (See the footnote indicated by an asterisk on page 1-21(E).)

## 1-2-10. Iris and Master Black Adjustment Block



## RCP-3721



### ③① RELATIVE button

When this button is pressed, it lights and the adjustment mode of the IRIS control lever ③⑨ and master black control ring ④⑩ (RCP-3720) or the IRIS ③⑫ and MASTER BLACK ③⑪ control knobs (RCP-3721) changes from the absolute to the relative mode. (See page 1-22(E).)

### ③② EXTENDER indicator (amber)

This indicator lights when the lens extender is used.

### ③③ MASTER BLACK display window

This display window indicates the adjusted value of master black in percent. When the master black control ring ④⑩ (RCP-3720) or the MASTER BLACK control knob ③⑫ (RCP-3721) is in the absolute mode (when the RELATIVE button ③① is unlit), it is the value absolutely corresponding to the position of the ring or knob that is indicated here.

When the camera adjustment data is recalled from a scene file with the ring or knob being in the relative mode (with the RELATIVE button being lit), it is the master black value stored in the scene file that is indicated here, regardless of the position the ring or knob is in at the time of data recalling.

### ③④ IRIS display window

This display window indicates the f number of the current lens iris adjustment. When the iris is closed, the letters CL is displayed.

### ③⑤ AUTO IRIS button

When this button is pressed, it lights and the iris is automatically adjusted according to the amount of input light. As a result, the image brightness is adjusted to a standard level.

While the button is lit, the reference value for automatic iris adjustment can be changed in the range of  $\pm 1$  F by moving the IRIS control lever ③⑨ (RCP-3720) or turning the IRIS control knob ③⑫ (RCP-3721). (The standard reference value for automatic iris adjustment is given at the central position of the lever or knob.) To exit from the automatic iris adjustment mode, press this button again. The light goes out and the IRIS control lever (or knob) becomes usable for manual iris adjustment.

**⑥ IRIS COARSE control knob**

Used to coarsely adjust the iris.

**⑦ SENS (sensitivity) adjustment screw**

To set the range of manual iris adjustment to be performed using the IRIS control lever ⑨ (RCP-3720) or knob ⑩ (RCP-3721), adjust this screw with a screwdriver.

Turning it clockwise increases adjustment sensitivity, decreasing the range of manual iris adjustment.

**⑧ Master black indicator (RCP-3720)**

When the master black control ring ⑩ is turned, this indicator also turns, giving an approximate indication of the adjusted master black value. However, when the RELATIVE button ⑪ is lit, there is no absolute relation between indicator position and master black value.

**⑨ IRIS control lever/preview knob (RCP-3720)**

While the AUTO IRIS button ⑤ is unlit, manual iris adjustment can be performed by moving this lever. (The central value and range of adjustment can be varied using the IRIS COARSE control knob ⑥ and the SENS adjustment screw ⑦, respectively.)

While the AUTO IRIS button ⑤ is lit, this lever enables the reference value for automatic iris adjustment to be changed in the range of  $\pm 1 F$ .

While the RELATIVE button ⑪ is lit, this lever works in the relative mode. (See page 1-23(E).)

When this lever (knob) is pressed down in its axial direction, the key signal for preview is output from the PREVIEW connector (see 1-2-11.) and the picture signal from the camera under control of this panel is displayed on the monitor screen.

**⑩ Master black control ring (RCP-3720)**

Used to manually adjust the master black. When this ring is turned, the master black indicator ⑧ also turns, giving an approximate indication of the adjusted master black value. While the RELATIVE button ⑪ is lit, this ring works in the relative mode. (See page 1-22(E).)

**⑪ Joystick torque adjustment screw (RCP-3720)**

To adjust the torque required to move the IRIS control lever ⑨, turn this screw with a screwdriver. Turning it clockwise makes the lever harder to move.

**⑫ IRIS control knob (RCP-3721)**

While the AUTO IRIS button ⑤ is unlit, this knob can be used to manually adjust the iris. (The central value and range of adjustment can be varied using the IRIS COARSE control knob ⑥ and the SENS adjustment screw ⑦, respectively.)

While the AUTO IRIS button ⑤ is lit, this knob can be used to vary the reference value for automatic iris adjustment in the range of  $\pm 1 F$ .

While the RELATIVE button ⑪ is lit, this lever works in the relative mode. (See page 1-22(E).)

**⑬ PREVIEW button (RCP-3721)**

When this button is pressed, it lights and the key signal for preview is output from the PREVIEW connector (see 1-2-11.).

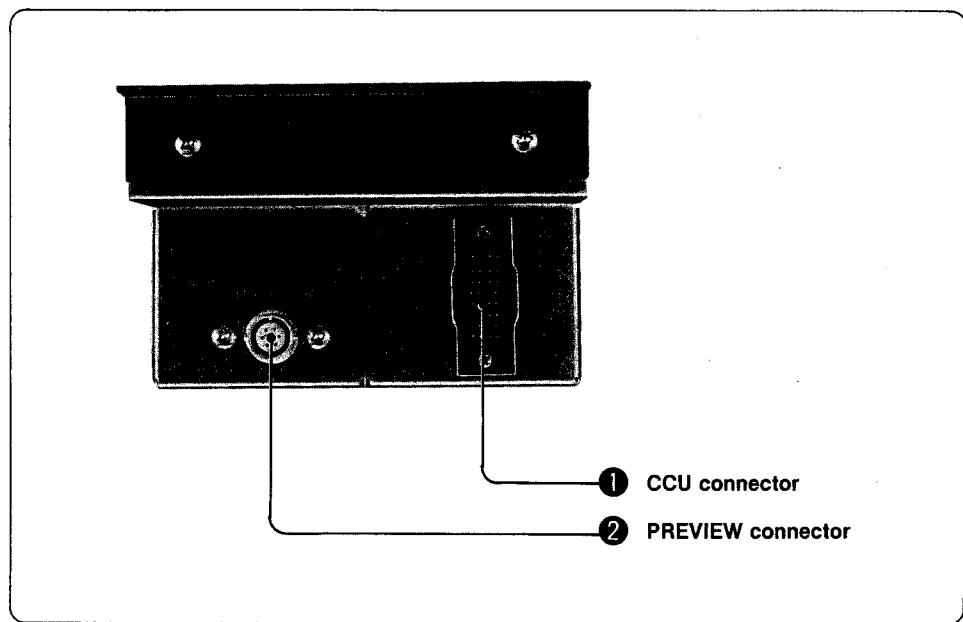
As a result, the picture signal from the camera under control of this panel is displayed on the monitor screen.

**⑭ MASTER BLACK control knob (RCP-3721)**

Used to adjust the master black.

While the RELATIVE button ⑪ is lit, this knob works in the relative mode. (See page 1-22(E).)

## 1-2-11. Connector Panel



### ① CCU connector (16-pin)

This connector provides the connections for power supply and control signals. Connect it to the RCP connector (16-pin) of the camera control unit. For details, see 1-3-1 "Connection to the CCU."

### ② PREVIEW connector

In the case of the RCP-3720, this connector is used to transfer the PREVIEW knob on/off signal to an external video switcher or the like.

In the case of the RCP-3721, this connector is used to transfer the PREVIEW button on/off signal to an external video switcher or the like, and also to receive the power supply for button lighting from the video switcher or the like. For details, see 1-3-2 "PREVIEW connector."

## 1-3. Connections

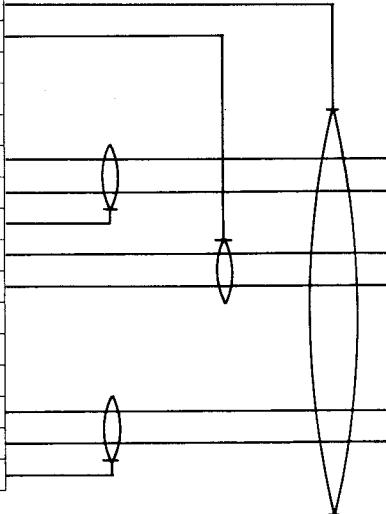
### 1-3-1. Connection to the CCU

Connection of this remote control panel to the camera control unit can readily be made by using a CCA-2-30 camera connecting cable (not supplied), which is 30 m long.

A different cable can also be used provided that it is equivalent to a CCA-2 cable and that it is not longer than 200 m. When employing such a connection cable, make use of the supplied 16-pin connectors complying with the wiring diagram shown below.

Pin name	No.
SHIELD	1
Power SHIELD	2
NC	3
NC	4
NC	5
CCU Data (X)	6
CCU Data (Y)	7
CCU Data SHIELD	8
+30 V	9
GND (+30 V)	10
NC	11
NC	12
NC	13
RCP Data (X)	14
RCP Data (Y)	15
RCP Data SHIELD	16

Same connections at both ends of the cable



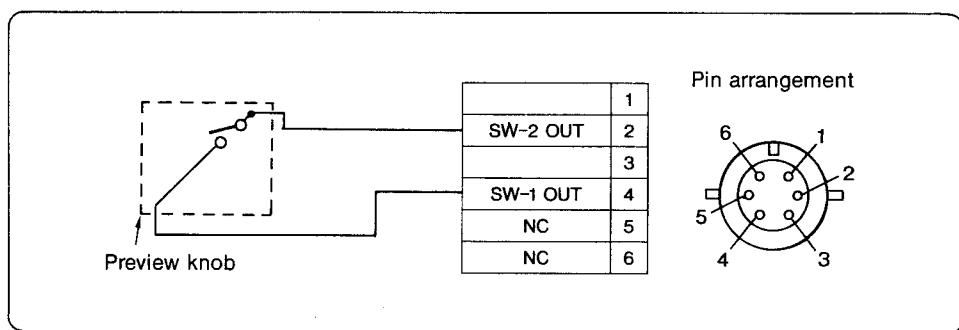
Cable consisting of three twisted-pairs of wire each protected with AWG-24 shield, and an outer shield

## 1-3-2. PREVIEW Connector

The PREVIEW connector is wired as shown below. It controls an external video switcher or the like.

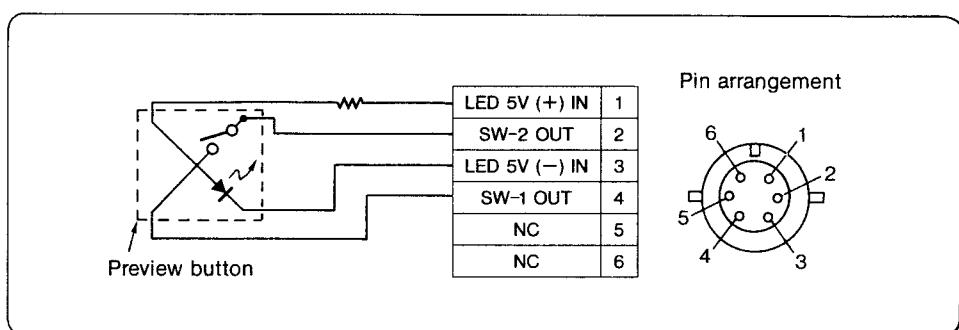
### RCP-3720

The maximum current through the switch of the PREVIEW knob is 1 mA.



### RCP-3721

The power supply voltage for making the PREVIEW button light up is 5 V. The maximum current through the switch is 1 mA.



## 1-4. Operation

To make it possible to control your camera system from this panel, press the PANEL ACTIVE button on the panel to turn it on.

Whether which block (or control) of the panel is operative depends on the states of the PANEL ACTIVE and PARA buttons as shown below.

State of button		Operative Block
PANEL ACTIVE	PARA	
Lit	Lit	All blocks (including PARA button)*
	Blinking	Only iris and master black adjustment block
	Unlit	All blocks (excluding PARA button)*
Lit	Unlit Blinking Unlit	Only PANEL ACTIVE, LOCK, and RELATIVE buttons**

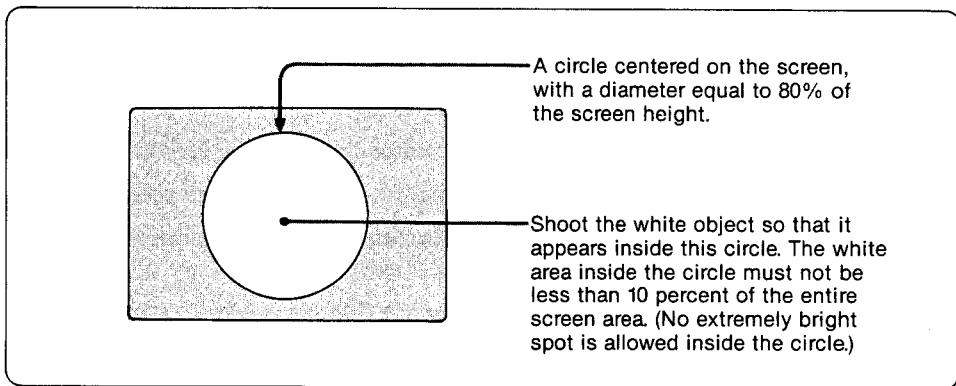
\* When the LOCK button is lit, it is only the iris and master black adjustment block and the LOCK button that are operative. To make the other blocks operative, press the LOCK button to turn it off.

\*\* When the LOCK button is lit, the PANEL ACTIVE button is not operative. To make the PANEL ACTIVE button operative, press the LOCK button to turn it off.

## 1-4-1. Automatic Adjustment of White and Black Balance

To have the white and black balance automatically adjusted, proceed as follows:

- 1 Press the AUTO IRIS button. It lights and the iris enters the automatic adjustment mode.
- 2 Set all of the WHITE and BLACK control knobs to their central positions.\*
- 3 Using the CC FILTER select buttons, select a color temperature conversion filter appropriate for the light source illuminating the subject.
- 4 If necessary, change the ND filter selection using the ND FILTER select buttons.
- 5 Shoot a white pattern. Something white (for example, white paper or wall) may be shot as a substitute.



- 6 Press the WHITE button. It lights and the white balance is automatically adjusted. When the adjustment is completed, the WHITE button goes out.\*\*
- 7 Press the BLACK button. It lights and the black balance is automatically adjusted. When the adjustment is completed, the BLACK button goes out.\*\*

\* Execution of automatic adjustment of white and black balance puts the WHITE and BLACK control knobs in the relative mode of operation. In the relative mode, the central position of each knob does not always correspond to the central value of the adjustable range. And the position where the knob was in at the time of the automatic adjustment represents the automatically adjusted value, namely the reference value for manual adjustment (or painting). That is why it is recommended to execute step 2. To switch from the relative mode back to the absolute mode in which the central position of each knob represents the central value of the adjustable range, press the RELATIVE button to turn it off.

\*\* If an error occurs during the adjustment, the button starts blinking. To stop it from blinking, press any button on this panel.

## 1-4-2. Iris Adjustment

While the AUTO IRIS button is lit, the iris is automatically controlled. With the AUTO IRIS button being unlit, the iris can be manually adjusted as required.

### Automatic Adjustment

- 1 Set the IRIS control lever (RCP-3720) or knob (RCP-3721) to its central position.
- 2 Press the AUTO IRIS button to turn it on.  
The iris is adjusted to an appropriate value according to the amount of input light.
  - When the AUTO IRIS button is on, the reference value for automatic iris adjustment can be changed in the range of  $\pm 1 F$  by moving the IRIS control lever or turning the IRIS control knob.

### Manual Adjustment

#### Setting the adjustable range

- 1 If the AUTO IRIS button is lit, press it to turn it off.
- 2 Set the IRIS control lever (RCP-3720) or knob (RCP-3721) to its central position.
- 3 Using the IRIS COARSE control knob, determine the center of the adjustable range for the IRIS control lever or knob.
- 4 Fully move or turn the IRIS control lever or knob in both directions to make sure of the adjustable range. To narrow or widen the range, turn the SENS adjustment screw clockwise or counterclockwise with a screwdriver.

#### Adjustment

Move or turn the IRIS control lever or knob to adjust the iris so that a picture of desired characteristics is obtained.

### Note on the absolute mode and relative mode

The IRIS control lever (RCP-3720) or knob (RCP-3721) operates in the absolute mode when the RELATIVE button is unlit, and in the relative mode when lit. The same is true of the master black control ring (RCP-3720) or the MASTER BLACK control knob (RCP-3721).

In the absolute mode, position of the control absolutely corresponds to adjustment value and the central position always represents the central value of the adjustable range. It is not the same with the relative mode, in which the position the control was in at the time of switching from absolute to relative represents the reference value for adjustment.

If the AUTO IRIS button is pressed to turn off to switch from automatical to manual iris adjustment while the RELATIVE button is unlit (absolute mode), the automatically adjusted iris value instantaneously changes to the value corresponding to the current position of the IRIS control lever (RCP-3720) or knob (RCP-3721). This means that switching from automatic to manual may cause an undesirable sudden change in picture brightness.

However, if the RELATIVE button is pressed to turn on (relative mode) before automatic-to-manual switching, the above phenomenon does not occur because the iris value automatically adjusted at the time of the switching is held, regardless of the position of the IRIS control lever or knob at the switching time.

## 1-4-3. Scene File Operation

Camera adjustment and control data for a particular scene can be stored in the camera head in the form of a scene file. You can create up to five scene files operating this panel. The data stored in any of the five scene files can easily be recalled at any time to automatically adjust the camera system according to the recalled data.

The data items which can be stored in scene files are listed below.

- Selection of ND filter
- Selection of color temperature conversion filter
- Selection of master gain
- Selection of shutter speed
- On/off state of the auto knee circuit
- Knee point adjustment value
- Master gamma adjustment value
- Detail adjustment value (for contour correction)
- White balance adjustment value
- Black balance adjustment value
- On/off state of the auto iris circuit
- Master black adjustment value

### Storing scene file data

- 1 Using the controls on this panel, adjust the desired items for a camera scene for which you want to store the adjustment data in a scene file.
- 2 Press the STORE button to make it start blinking.
- 3 Press one of the file number select buttons 1 to 5 to select a scene file in which to store the adjustment data. The file number select button lights, and the adjustment data is stored into the selected file.  
On completion of data storing, the STORE button stops blinking to go out while the file number select button remains lit.
  - If a file already having adjustment data in it is selected, the old data is replaced with new data.

### Recalling scene file data

- 1 Set all of the WHITE and BLACK control knobs to their central positions.\*
- 2 Press one of the file number select buttons 1 to 5 to select a scene file to be used.  
The file number select button lights, and the data in the selected file is recalled.
  - If you press a file number select button which has been lit, it goes out and the camera system returns to the state it was in before the data was recalled from the corresponding file.

\* Scene file data can be recalled even if you does not execute step 2. However, data recalling operation puts the WHITE and BLACK control knobs in the absolute mode,

so execute step 2 if you want the central position of each knob to be the reference position for manual white and black balance adjustment after recalling scene file data.

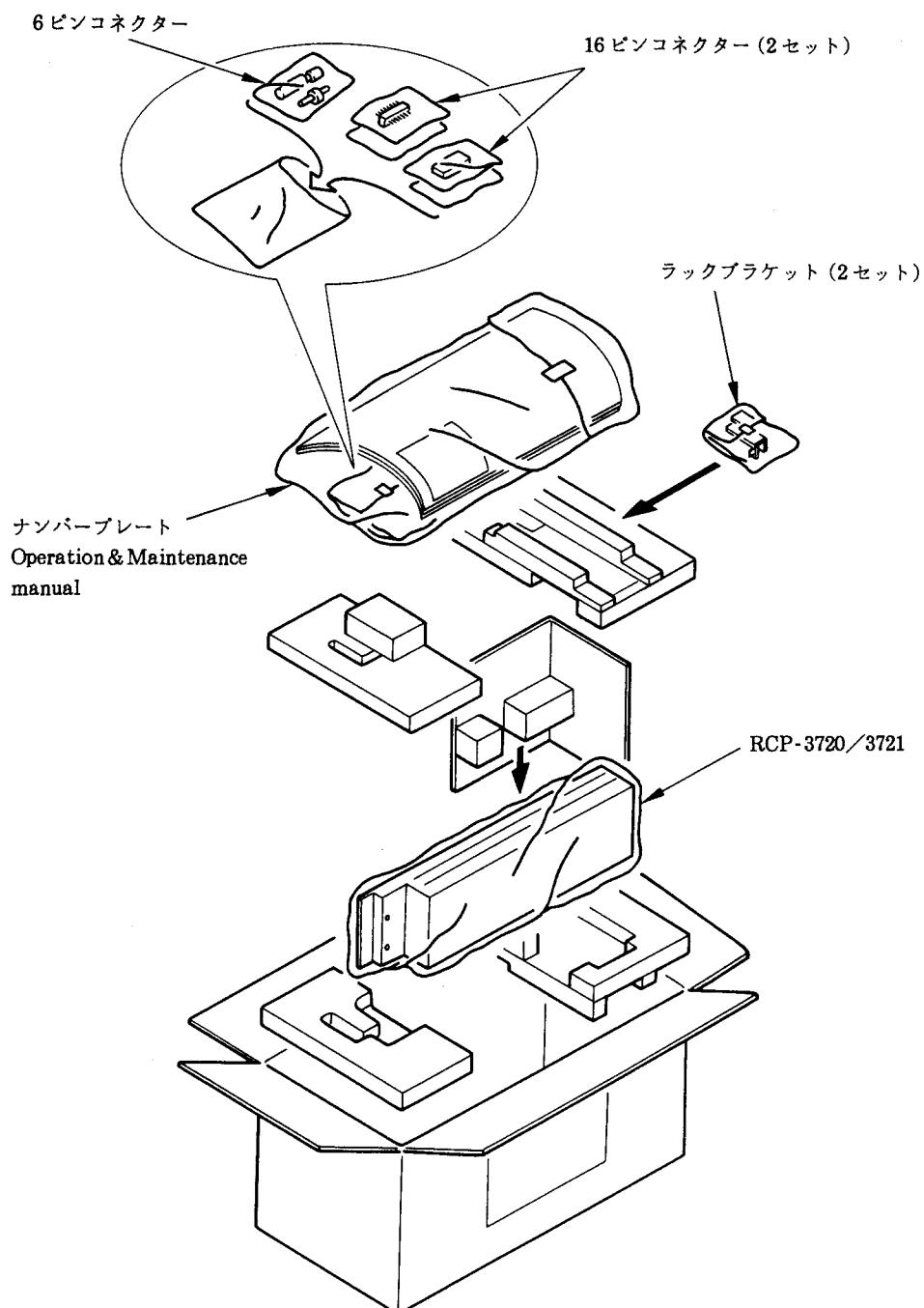
## 1-5. Specifications

Connectors	CCU connector (16-pin) PREVIEW connector (6-pin)
Power supply	30 V DC
Power consumption	4 W
Maximum cable length	200 m (656 feet 5½ inches) (CCA-2 cable or equivalent)
Weight	RCP-3720: 1.7 kg (3 lb 12 oz) RCP-3721: 1.4 kg (3 lb 1 oz)
Dimensions (w/h/d, including projecting parts)	RCP-3720: 102 × 354 × 127 mm (4⅛ × 14 × 5 inches) RCP-3721: 102 × 354 × 84 mm (4⅛ × 14 × 3⅓ inches)
Supplied accessories	16-pin connectors (2) 6-pin connector (1) Number plate (1 set) Operation and maintenance manual (1)
Accessories not supplied	CCA-2-30 camera connecting cable

Design and specifications are subject to change without notice.

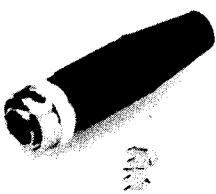
## 第2章 設 置

### 2-1. 開梱と再梱包

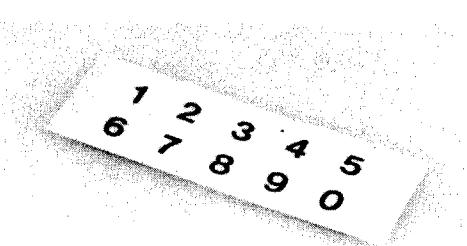


## 2-2. 標準付属品

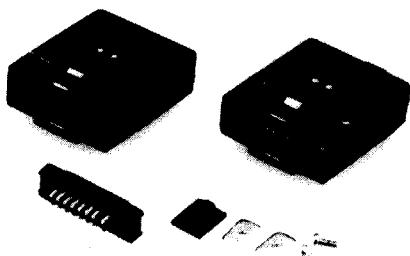
プレビューコネクター (6ピン): 1セット  
PREVIEW ボタンの ON/OFF の信号をスイッチャーへ伝達します。



ナンバープレート: 1シート



CCU コネクター (16ピン): 2セット  
CCU-370 の RCP コネクターに接続します。電源及びコントロール信号の受け渡しをします。



Operation & Maintenance manual: 1冊

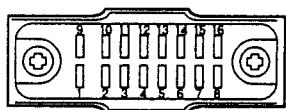
注) カメラ接続ケーブル CCA-2-30 (16ピンコネクター付き) は、別売りアクセサリーとなります。

## 2-3. 適合コネクター／ケーブル

### 2-3-1. コネクターの入出力信号

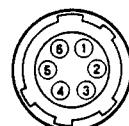
- ・コネクターの入出力信号は、次の通りです。

CCU (16 Pin)



(EXT VIEW)

PREVIEW (6 Pin)



(EXT VIEW)

RCP-3720

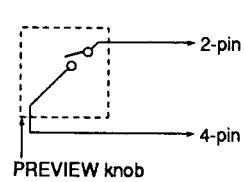
PIN No.	SIGNAL	SPECIFICATION
1	CABLE SHIELD	—
2	GND	—
3	NC	Non-connection
4	NC	Non-connection
5	NC	Non-connection
6	CCU-RCP DATA (X)	CCU SERIAL DATA
7	CCU-RCP DATA (Y)	OUTPUT: 0.7~4.3 Vp-p,
8	CCU-RCP DATA (G)	Zo=68Ω BALANCED
9	POWER (RCP)	RCP POWER: +30 V or +24 V DC
10	GND (RCP)	—
11	NC	Non-connection
12	NC	Non-connection
13	NC	Non-connection
14	RCP-CCU DATA (X)	RCP SERIAL DATA
15	RCP-CCU DATA (Y)	INPUT: 0.7~4.3 Vp-p,
16	RCP-CCU DATA (G)	BALANCED

RCP-3721

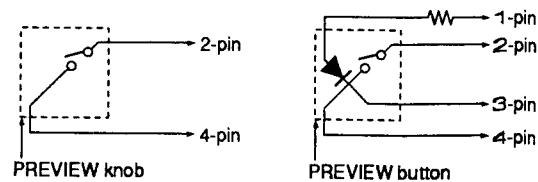
PIN No.	SIGNAL	SPECIFICATION
1	LED (+)	5 V DC max 1 mA
2	SW-2	30 V DC max 0.1 mA
3	LED (+)	5 V DC max 1 mA
4	SW-1	30 V DC max 0.1 mA
5	NC	Non-connection
6	NC	Non-connection

PREVIEW コネクター結線図

RCP-3720



RCP-3721



## 2-3-2. 接続コネクター

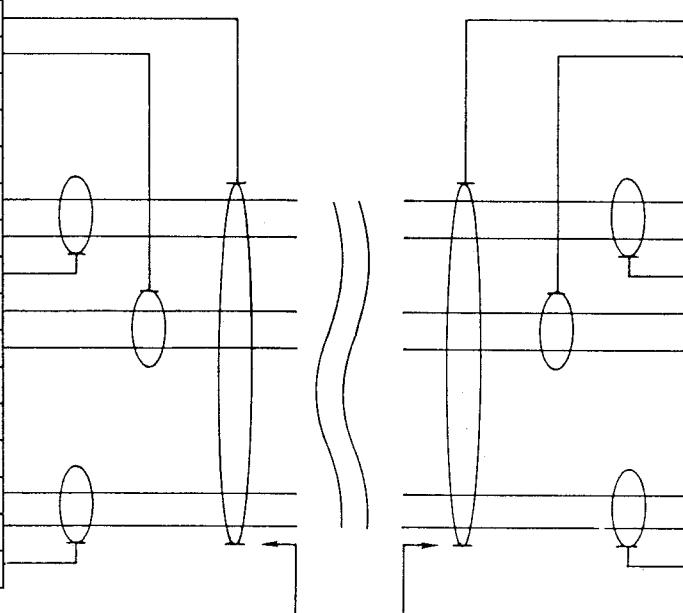
設置時、サービス時等において、コネクターパネル部の各種コネクターにケーブルを接続する際には、その先端に次に記するコネクター又は、同等品を使用して下さい。

コネクター機能名称	接続するケーブル側のコネクターの部品番号および名称
PREVIEW (6P, FEMALE)	1-560-691-11 PLUG, CONNECTOR 6P MALE
CCU (16P, FEMALE)	1-564-970-11 CONNECTOR, MULTI (SQUARE) 16P MALE or CABLE ASSEMBLY CCA-2-30 (200 m) 16P

CCU-370と本パネルは、別売りのカメラ接続ケーブルCCA-2-30を使用します。これ以外のケーブルをお使いになる時は付属の16ピンコネクターを使って、下図のように配線して下さい。ケーブルの最大長は200mまでです。

※ケーブルの両端とも同じ接続

No	SIGNAL
1	CABLE SHIELD
2	GND
3	NC
4	NC
5	NC
6	CCU Data (X)
7	CCU Data (Y)
8	CCU Data (G)
9	POWER (RCP)
10	GND (RCP)
11	NC
12	NC
13	NC
14	RCP Data (X)
15	RCP Data (Y)
16	RCP Data (G)



SIGNAL	No
CABLE SHIELD	1
GND	2
NC	3
NC	4
NC	5
CCU Data (X)	6
CCU Data (Y)	7
CCU Data (G)	8
POWER (RCP)	9
GND (RCP)	10
NC	11
NC	12
NC	13
RCP Data (X)	14
RCP Data (Y)	15
RCP Data (G)	16

AWG-24 シールド付  
ツイストペア一線3組  
外周シールド付ケーブル

#### 2-4. 設置使用環境

本機は、カメラコントロールユニットCCU-370のRCPコネクターに接続し、調整卓に組み込んで使うことができます。

その際下記の環境内での使用に適応します。

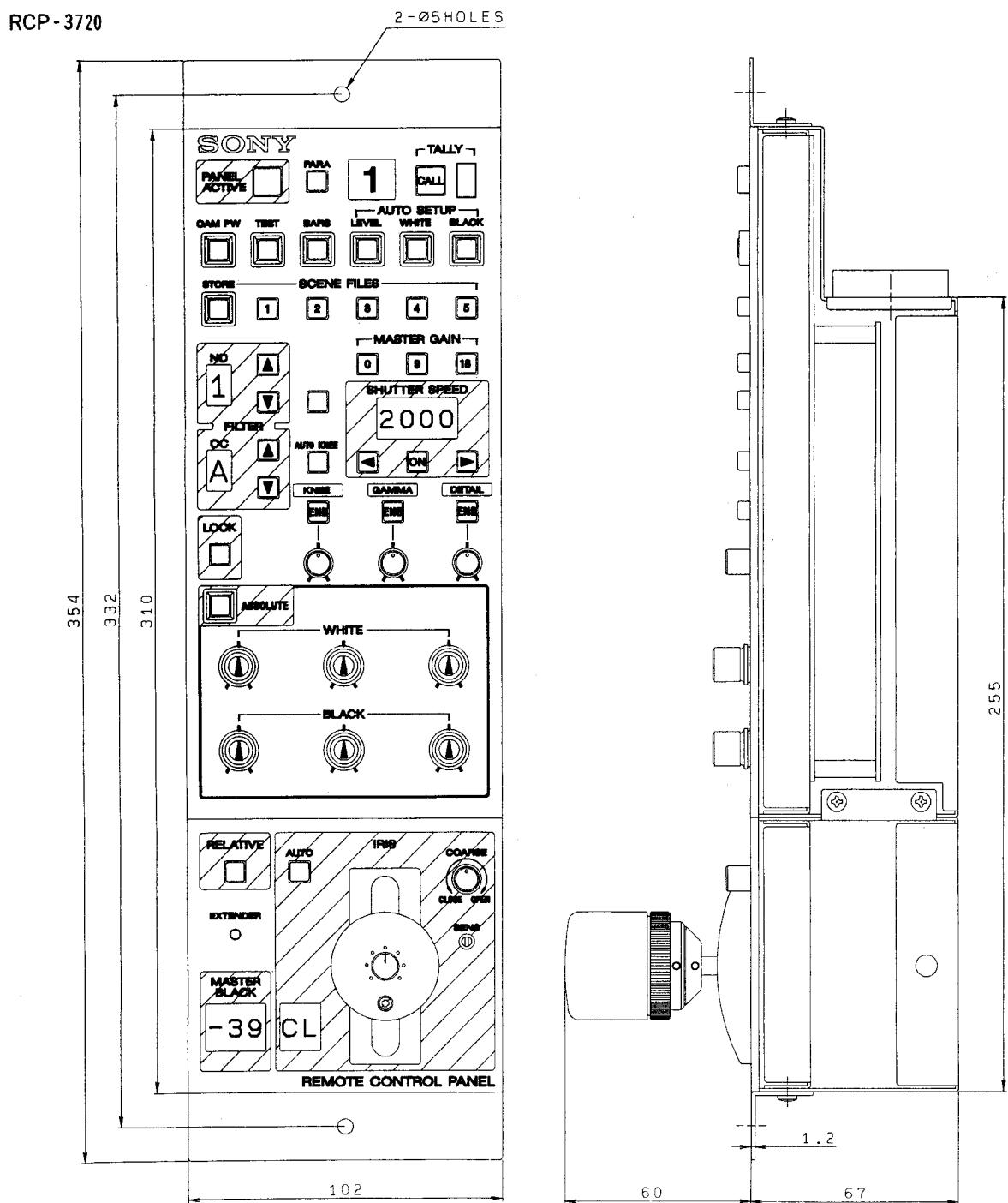
- ・動作周囲温度 0°C ~ 45°C
- ・保存温度 -25°C ~ +50°C
- ・湿度 結露状態に置かないこと。
- ・高温の部屋や熱源の近くは避けること。
- ・電源などの発熱体の上に置かないこと。

## 2-5. 設置スペース

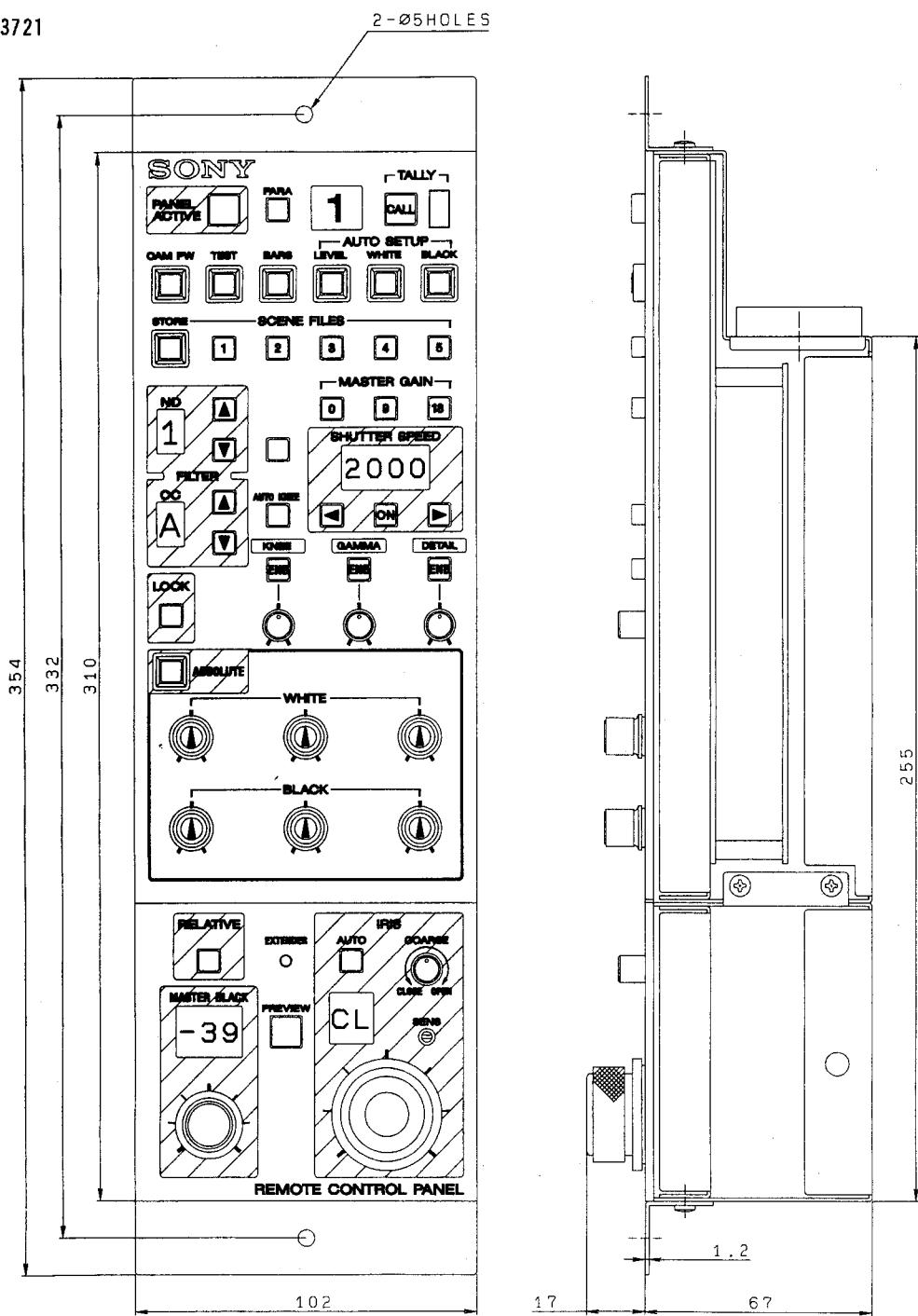
### 2-5-1. 設置条件

- コネクターパネルの後方に約7cm以上の空間を設けること。  
(ケーブルの損傷を防ぎます。)

### 2-5-2. 外形寸法 (単位mm)



RCP-3721

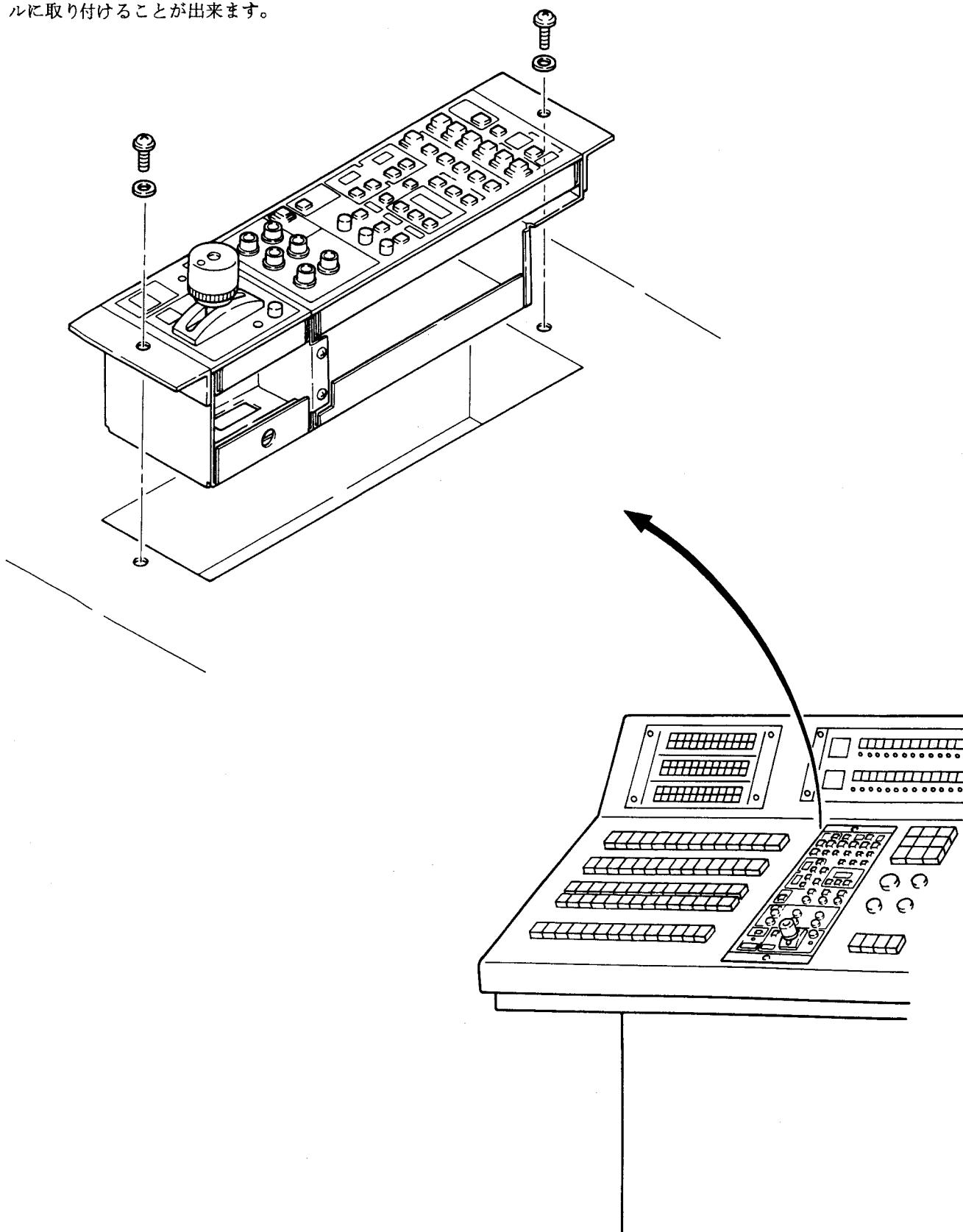


RCP-3720/3721 (WW)

2-7 (J)

### 2-5-3. コンソールへの取り付け方法

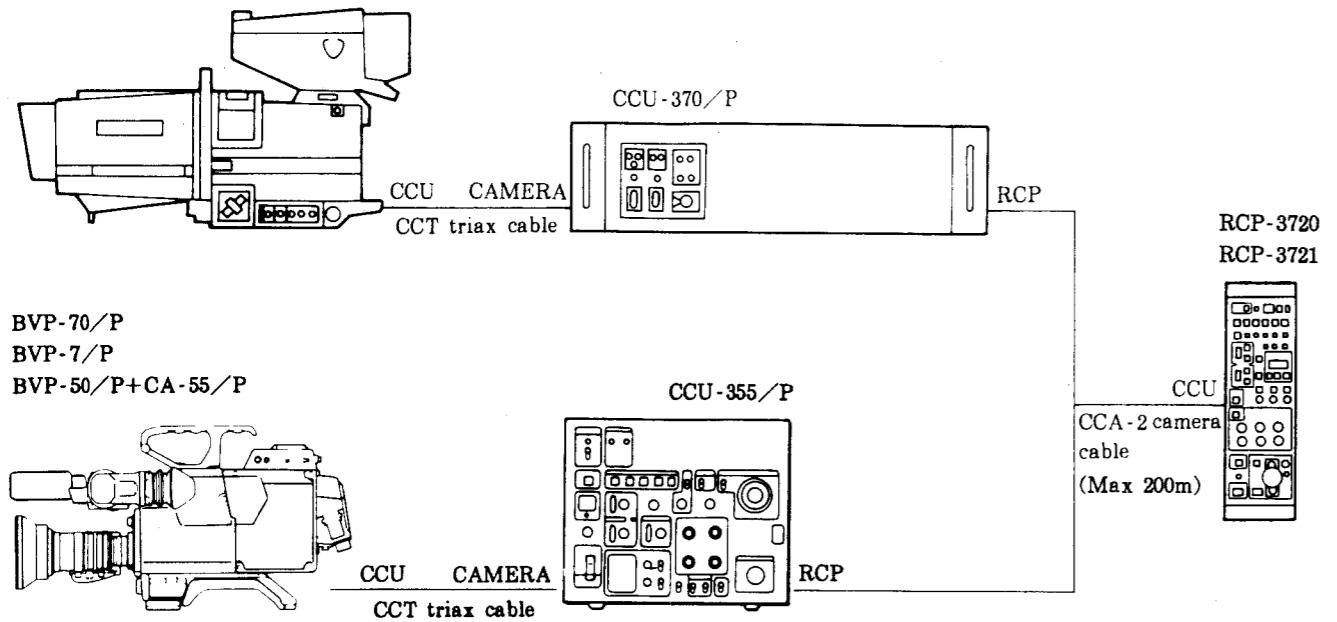
RCP-3720/3721 を付属の取り付け金具を用いてコンソールに取り付けることが出来ます。





## 2-7. システム接続

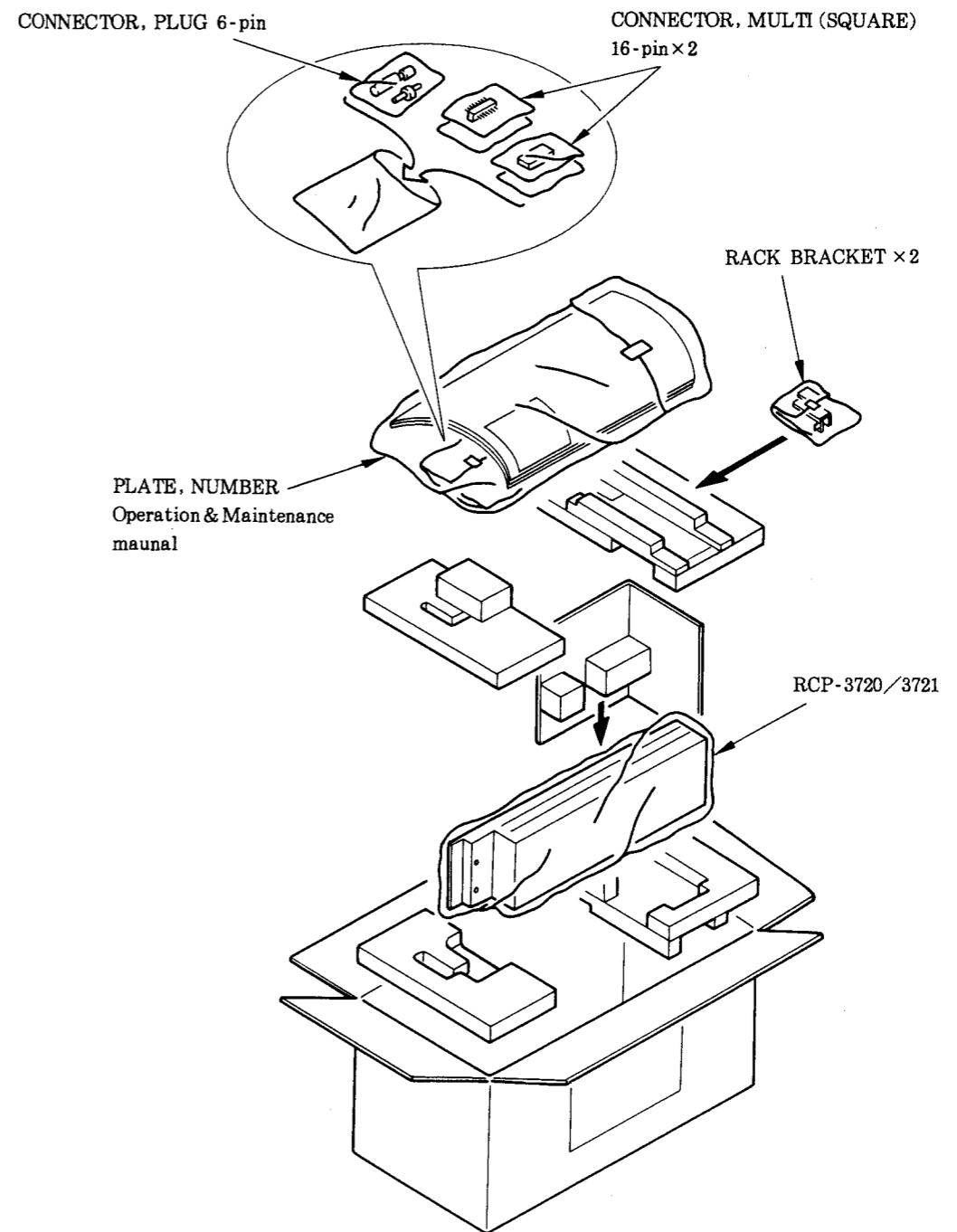
BVP-370/P  
BVP-270/P



BVP-70/P  
BVP-7/P  
BVP-50/P+CA-55/P

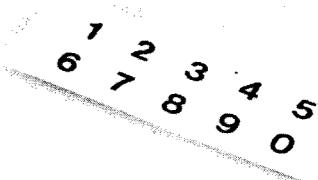
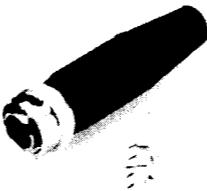
## SECTION 2 INSTALLATION

### 2-1. PACKING AND UNPACKING



## 2-2. SUPPLIED ACCESSORIES

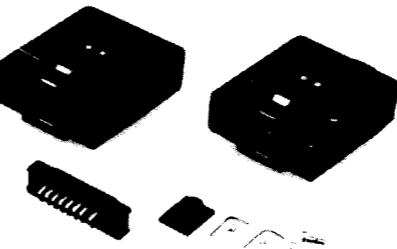
- Preview connector (6-pin) × 1  
Transmits the PREVIEW button ON/OFF signal to the switcher.
- Number plate × 1
- Operation and Maintenance manual × 1



### 2. INSTALLATION

- CCU Connector (16-pin) × 2  
Connects to the RCP connector of the CCU-370, and provides connections for power supply and control signals.

Note: Camera connection cable CCA-2-30 (with 16-pin connector) is an optional accessory.

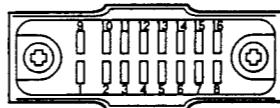


## 2-3. CONNECTORS AND CABLES

### 2-3-1. Connector Input/Output Signals

The main connector Input/Output signals are as follows.

CCU (16-pin)



(EXT VIEW)

PREVIEW (6-pin)



(EXT VIEW)

RCP-3720

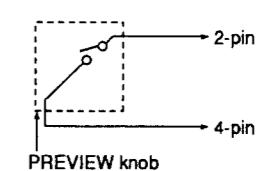
PIN No.	SIGNAL	SPECIFICATION
1	CABLE SHIELD	_____
2	GND	_____
3	NC	Non-connection
4	NC	Non-connection
5	NC	Non-connection
6	CCU-RCP DATA (X)	CCU SERIAL DATA OUTPUT: 0.7~4.3Vp-p, Zo=68 Ω BALANCED
7	CCU-RCP DATA (Y)	
8	CCU-RCP DATA (G)	
9	POWER (RCP)	RCP POWER: +30V or +24V DC
10	GND (RCP)	_____
11	NC	Non-connection
12	NC	Non-connection
13	NC	Non-connection
14	RCP-CCU DATA (X)	RCP SERIAL DATA INPUT: 0.7~4.3Vp-p, BALANCED
15	RCP-CCU DATA (Y)	
16	RCP-CCU DATA (G)	

RCP-3721

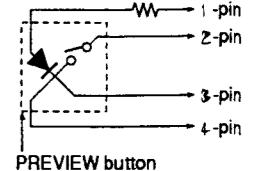
PIN No.	SIGNAL	SPECIFICATION
1	LED (+)	5V DC max 1mA
2	SW-2	30V DC max 0.1mA
3	LED (+)	5V DC max 1mA
4	SW-1	30V DC max 0.1mA
5	NC	Non-connection
6	NC	Non-connection

Note: The PREVIEW connector is wired as show in the diagram below, and controls the external video switcher.

RCP-3720



RCP-3721



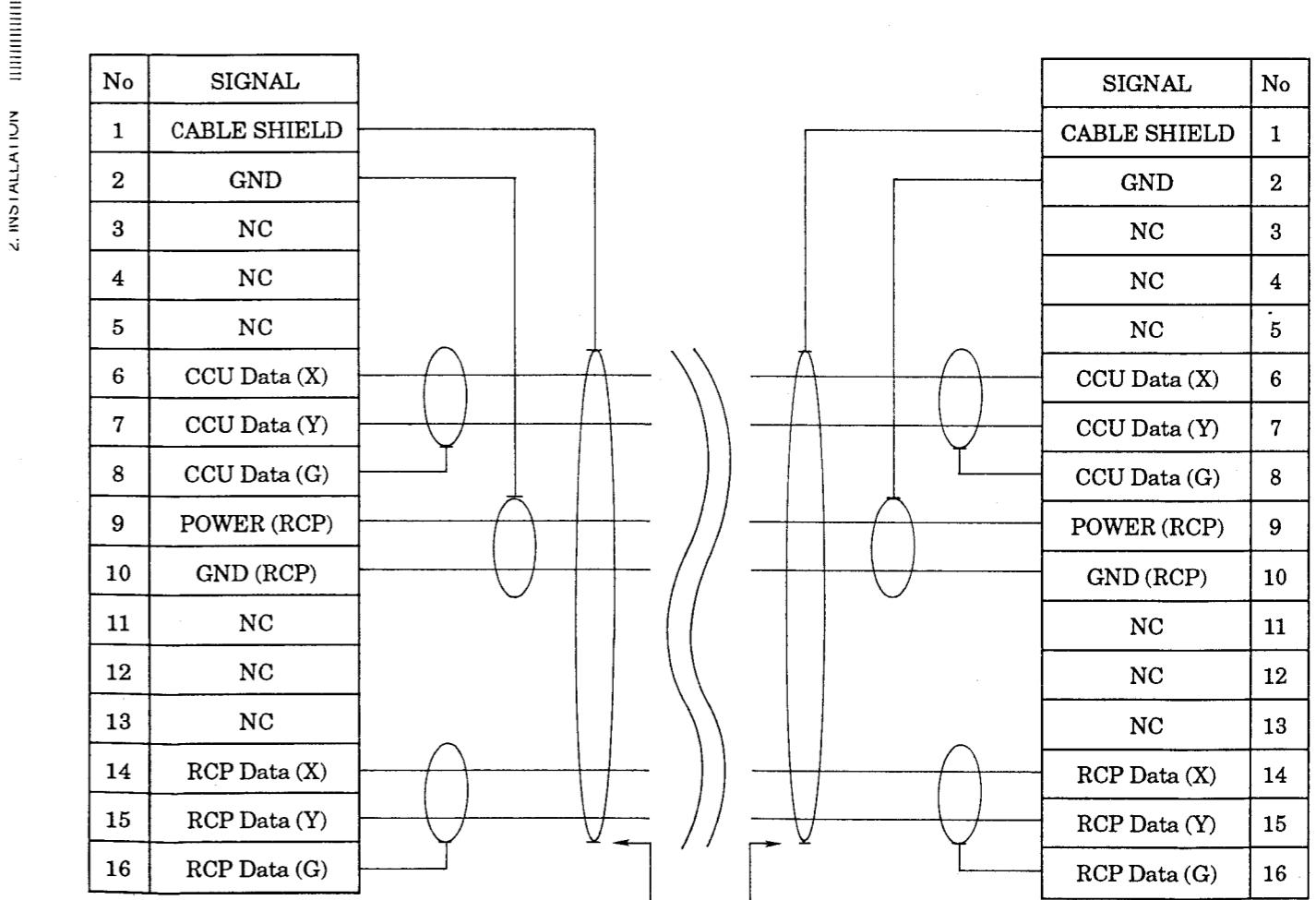
### 2-3-2. Connectors

When cable with connectors are set to the respective connectors on the connector panel during installation or service, the specified or equivalent connectors with cables, or the specified cable assemblies should be used, these are listed as follows;

Connector function	Parts No. and name of connector with cable	
PREVIEW (6P, FEMALE)	1-560-691-11	PLUG, CONNECTOR 6P MALE
CCU (16P, FEMALE)	1-564-970-11	CONNECTOR, MULTI (SQUARE) 16P MALE or CABLE ASSEMBLY CCA-2-30 (200m) 16P

Connection between the CCU-370 and the remote control panel can be made with the CCA-2-30 camera connecting cable which is optionally available. Or, if you wish to use cable other than this, make use of the supplied 16-pin connectors by wiring them as shown in the diagram below. The maximum cable length should be 20 m.

- Make the same connections at both ends of the cable.



Cable should contain three twisted pairs, each surrounded by AWG-24 shielded wire. These, in turn, should be surrounded by outer shield.

#### 2-4. OPERATING ENVIRONMENT

The set can be connected to the RCP connector of the camera control unit CCU-370 and installed into the control console. The set should be operated in the following environments.

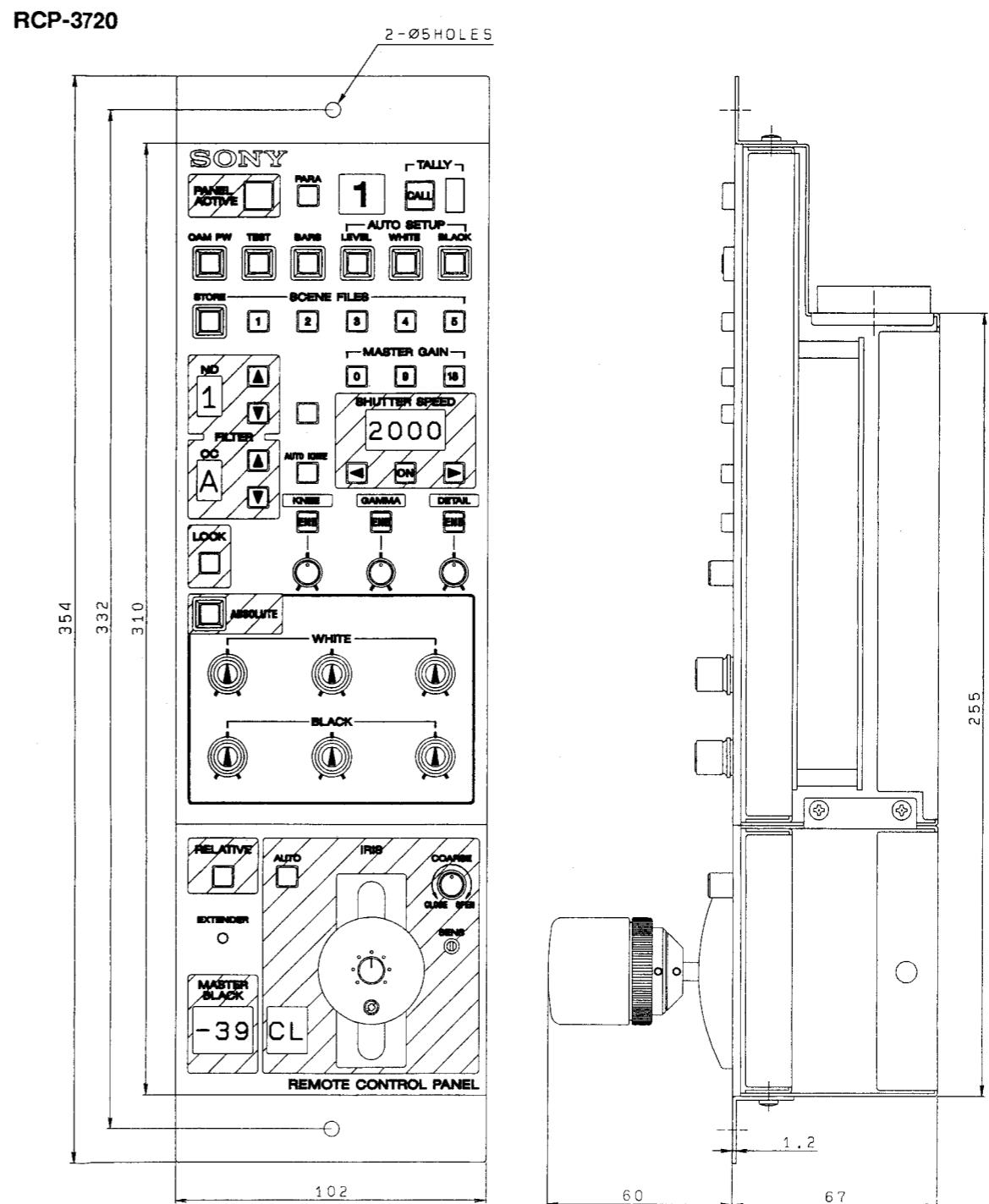
- Operating temperature      0°C to +45°C
- Storage temperature      -25°C to +50°C
- Avoid exposing the set to rain or moisture.
- Avoid placing the set in hot places.
- Avoid placing the set near a heat source such as a power source.

## 2-5. INSTALLATION SPACE

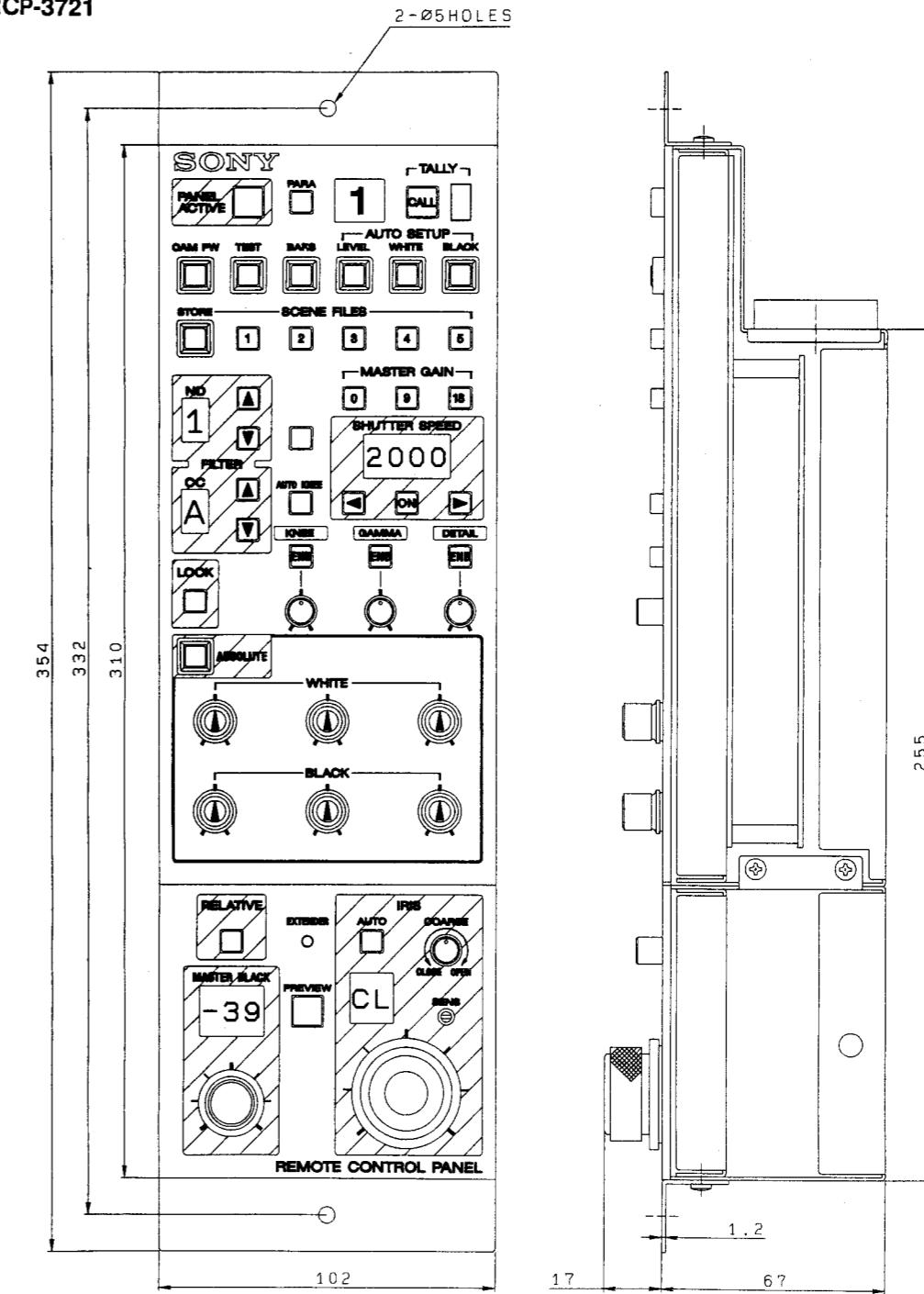
### 2-5-1. Installation Conditions

Provide a space of 7 cm or more behind the connector panel. (This prevents cable breakdown.)

### 2-5-2. Outside Dimensions (mm)

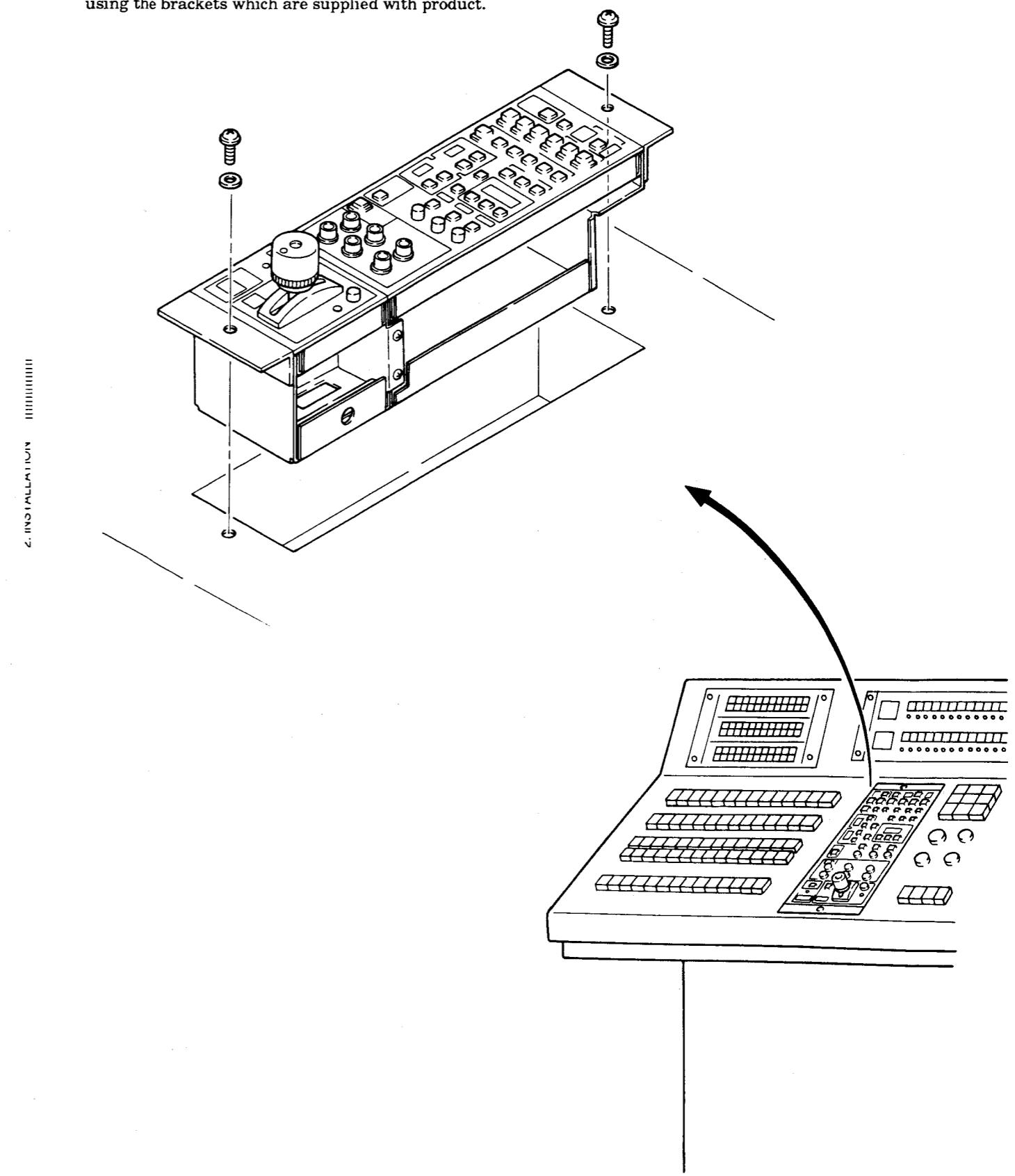


RCP-3721



### 2-5-3. Installation to Console

RCP-3720/3721 can be installed into the control console using the brackets which are supplied with product.

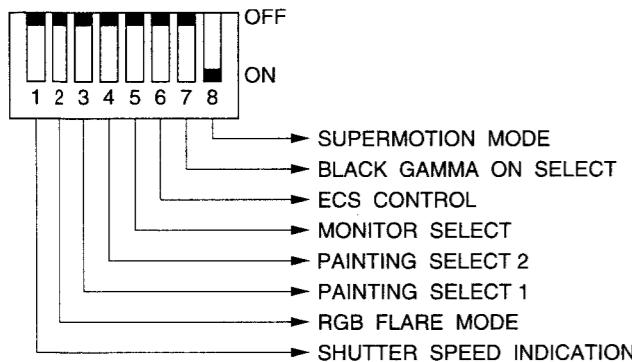


## 2-6. FUNCTION OF SWITCH ON PC BOARD

Applicable Serial No. 14001 and Higher (RCP-3720)  
11701 and Higher (RCP-3721)

### MPU-53 board

#### S1 switch



#### S1-1 (SHUTTER SPEED INDICATION)

When this switch is turned ON, the shutter speed indication in the SHUTTER SPEED display window on the control panel changes for the PAL system.

#### S1-2 (RGB FLARE MODE)

When this switch is turned ON, the RGB BLACK control knobs on the control panel function as the RGB FLARE control knobs.

#### S1-3 (PAINTING SELECT 1)

When this switch is turned ON, the KNEE ENB button/KNEE control knob and GAMMA ENB button/GAMMA control knob on the control panel function as the SATURATION ON button/SATURATION control knob and CONTRAST ON button/CONTRAST control knob respectively while the AUX button is lit.

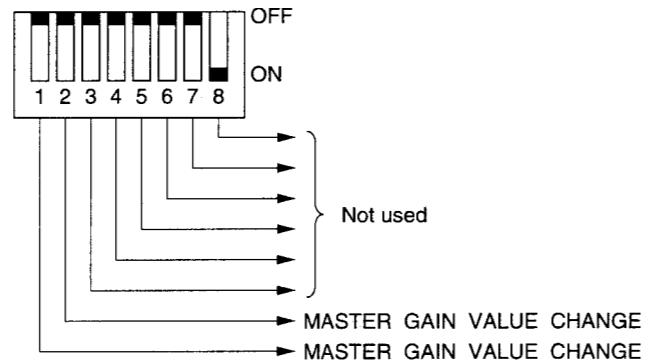
#### S1-4 (PAINTING SELECT 2)

When this switch is turned ON, the RGB BLACK control knobs on the control panel function as the RGB GAMMA control knobs while the GAMMA ENB button is lit.

#### S1-5 (MONITOR SELECT)

When this switch is turned ON, the switching input at CN6/SW-371 board selects the signals to be output from the PIX OUTPUT and WF OUTPUT connectors of the CCU. When an MSU and RCP are used together, the signal which was selected by the WF switching input can be output from the MONITOR OUTPUT connector, independently of the PIX and WF outputs. In this state, the PIX switching input becomes disable.

#### S2 switch



#### S1-6 (ECS CONTROL)

When this switch is turned ON, the ECS and SHUTTER functions change alternately every time either of SHUTTER SPEED select buttons on the control panel is pressed while pressing the SHUTTER ON button. In the ECS mode, the frequency changes by pressing the SHUTTER SPEED select buttons.

#### S1-7 (BLACK GAMMA ON SELECT)

When the switch S1-3 and this switch are turned ON, the GAMMA ENB button/GAMMA control knob on the control panel functions as the BLACK GAMMA ON button/BLACK GAMMA control knob while the AUX button is lit.

#### S1-8 (SUPERMOTION MODE)

When this switch is turned ON, the video gain 0/6/12 dB is selected by the MASTER GAIN select buttons on the control panel for the supermotion system. To replace key tops of the MASTER GAIN select buttons is also required. For details, refer to a CCU-9000/ 9000P maintenance manual, Section 1.

#### S2-1, S2-2 (MASTER GAIN VALUE CHANGE)

When the switch S2-1 is turned ON, the video gain 0/6/12 dB is selected by the MASTER GAIN select buttons on the control panel. When the S2-2 is turned ON, 0/3/6 dB is selected. Replace key tops of the MASTER GAIN select buttons according to necessary.

Key top 12 Sony Part No. 3-178-644-01

Key top 3 Sony Part No. 3-178-644-11

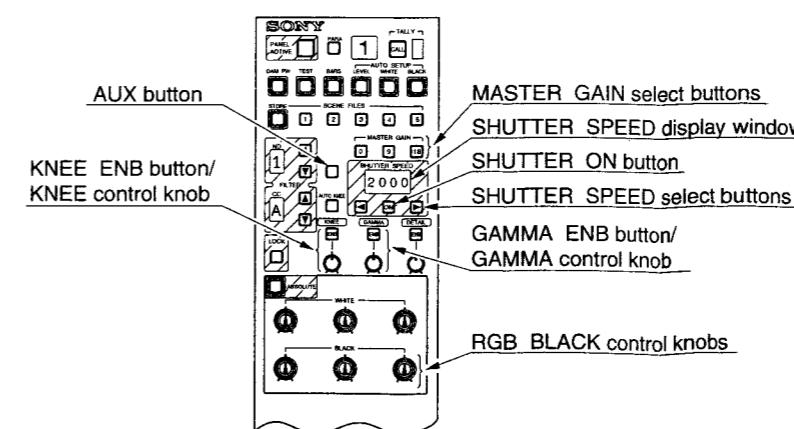
Key top 6 Sony Part No. 3-178-644-21

**Note:** When S2-1 and S2-2 are both turned ON, either becomes invalid.

◎ Operating Button functions according to Switch Settings of S1-2, S1-3, S1-4 and S1-7.

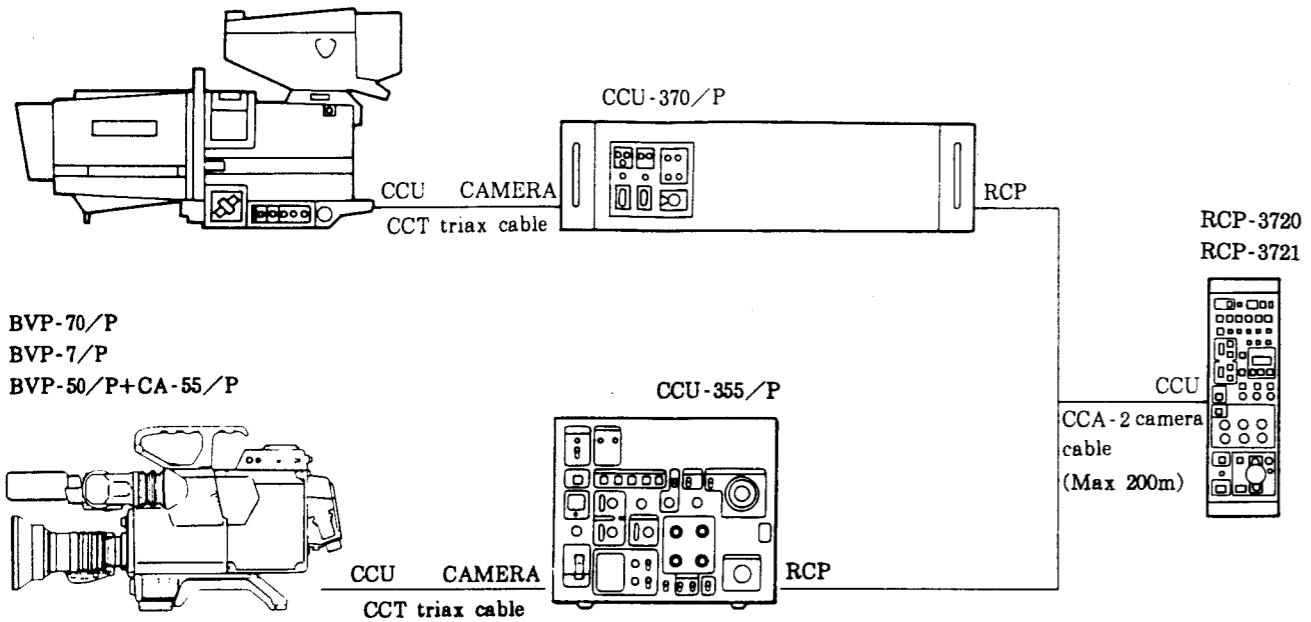
Functions of Operating Buttons				
S1-2	S1-3	S1-4	S1-7	
ON	OFF	OFF	OFF	RGB BLACK control knobs function as RGB FLARE control knobs.
ON	ON	OFF	OFF	RGB BLACK control knobs function as RGB FLARE control knobs. When AUX button is unlit, a unit is in normal mode. When lit, KNEE ENB button/control knob and GAMMA ENB button/control knob function as SATURATION ON button/control knob and CONTRAST ON button/control knob respectively.
ON	ON	ON	OFF	RGB BLACK control knobs function as RGB FLARE control knobs. When AUX button is unlit, a unit is in normal mode. When GAMMA ENB button is lit while AUX button is unlit, RGB FLARE control knobs temporarily function as RGB GAMMA control knobs. When AUX button is lit, KNEE ENB button/control knob and GAMMA ENB button/control knob function as SATURATION ON button/control knob and CONTRAST ON button/control knob respectively.
ON	ON	ON	ON	RGB BLACK control knobs function as RGB FLARE control knobs. When AUX button is unlit, a unit is in normal mode. When GAMMA ENB button is lit while AUX button is unlit, RGB FLARE control knobs temporarily function as RGB GAMMA control knob. When AUX button is lit, KNEE ENB button/control knob and GAMMA ENB button/control knob function as SATURATION ON button/control knob and BLACK GAMMA ON button/control knob respectively.
OFF	ON	OFF	OFF	When AUX button is unlit, a unit is in normal mode. When KNEE ENB button/control knob and GAMMA ENB button/control knob function as SATURATION ON button/control knob and CONTRAST ON button/control knob respectively.
OFF	ON	ON	OFF	When AUX button is unlit, a unit is in normal mode. When GAMMA ENB button is lit while AUX button is unlit, RGB BLACK control knobs temporarily function as RGB GAMMA control knobs. When AUX button is lit, KNEE ENB button/control knob and GAMMA ENB button/control knob function as SATURATION ON button/control knob and CONTRAST ON button/control knob respectively.
OFF	ON	ON	ON	When AUX button is unlit, a unit is in normal mode. When GAMMA ENB button is lit while AUX button is unlit, RGB BLACK control knobs temporarily function as RGB GAMMA control knobs. When AUX button is lit, KNEE ENB button/control knob and GAMMA ENB button/control knob function as SATURATION ON button/control knob and BLACK GAMMA ON button/control knob respectively.
OFF	OFF	ON	OFF	When GAMMA ENB button is lit, RGB BLACK control knobs temporarily function as RGB GAMMA control knobs.

## CONTROL PANEL BLOCK



## 2-7. SYSTEM CONFIGURATION

BVP-370/370P  
BVP-270/270P



## 第3章

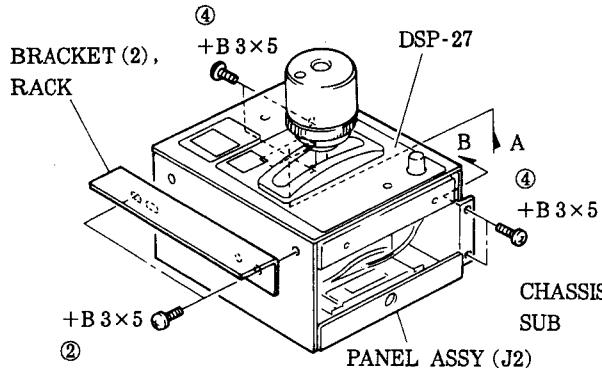
### サービスインフォメーション

#### 3-1. 主要部品の交換方法

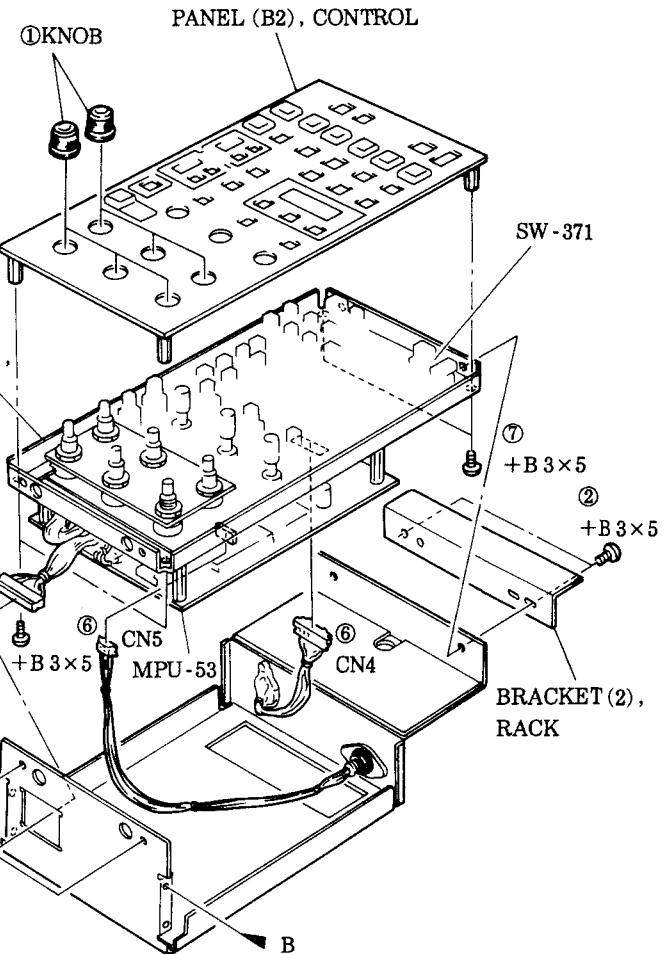
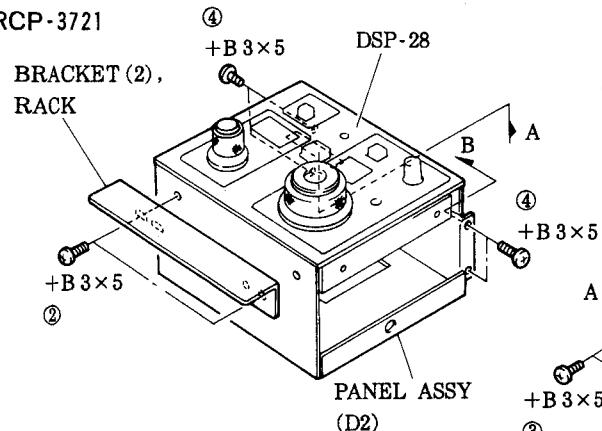
##### 3-1-1. 外装の外し方

- ① KNOB を6個外します。
- ②ねじ (+B 3×5) 2本を外し, RACK BRACKET (2) をそれぞれ外します。
- ③SUB CHASSIS (B2) を止めているねじ (+B 3×5) 2本を外します。
- ④ねじ (+B 3×5) 4本を外すと PANEL ASSY (J2) が外れます。 (RCP-3720のみ)
- ねじ (+B 3×5) 4本を外すと PANEL ASSY (D2) が外れます。 (RCP-3721のみ)
- ⑤DSP-27 基板のコネクター CN1 を外します。  
(RCP-3720のみ)
- DSP-28 基板のコネクター CN1 を外します。  
(RCP-3721のみ)
- ⑥SW-371 基板のコネクター CN5 と MPU-53 基板のコネクター CN4 を外します。
- ⑦ねじ (+B 3×5) 4本を外し, CONTROL PANEL (B2) を外します。

RCP-3720

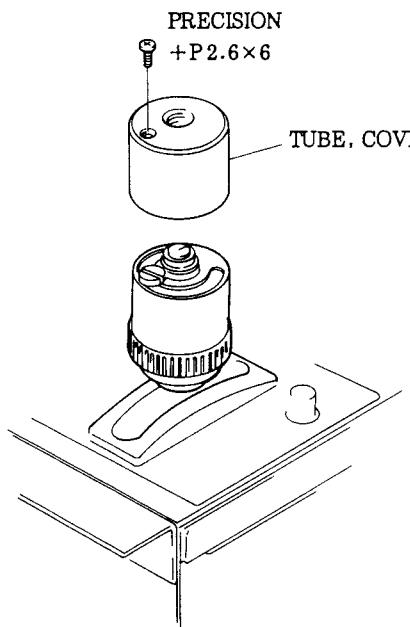


RCP-3721

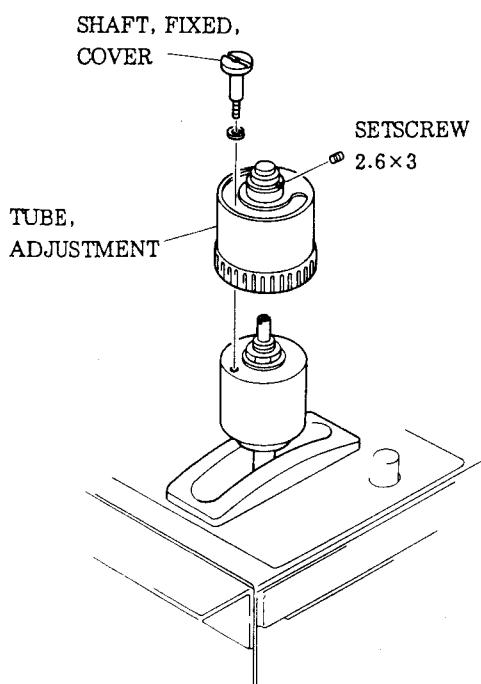


3-1-2. ジョイスティックボリュームの交換方法  
(RCP-3720のみ)

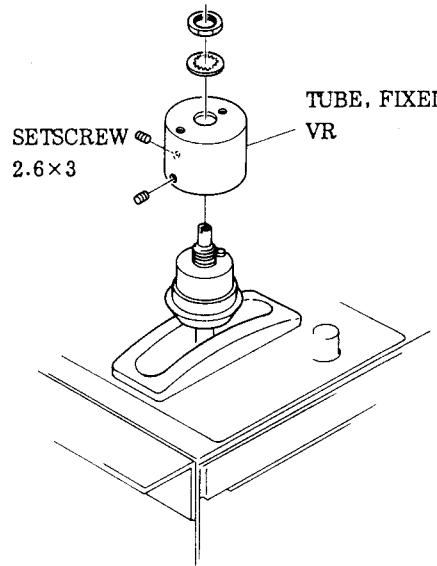
1. ねじ(PRECISION+P2.6×6)1本を外し, COVER TUBEを外します。



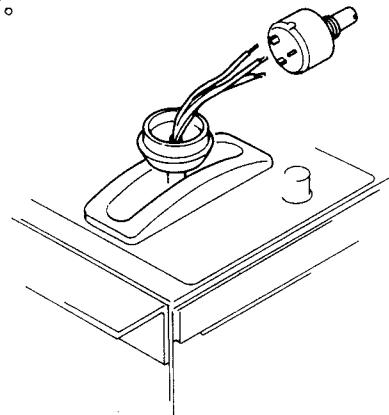
2. COVER FIXED SHAFTを外します。ねじ(SETSCREW 2.6×3)1本を外し, ADJUSTMENT TUBEを外します。



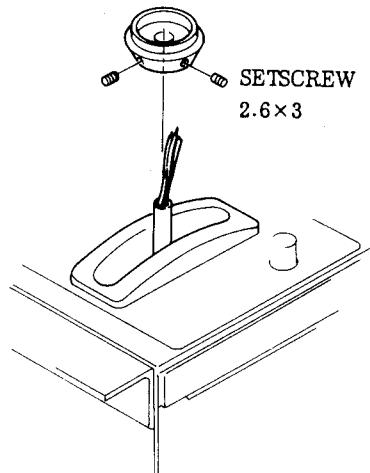
3. ボリュームを止めているナット及びねじ(SETSCREW 2.6×3)2本を外し, VR FIXED TUBEを外します。



4. ボリュームに接続しているハーネスの半田付けを外します。



5. CONTROL PANEL (J2)を外すときは, ねじ(SETSCREW 2.6×3)2本を外し, LEVER FIXED TUBEを外します。

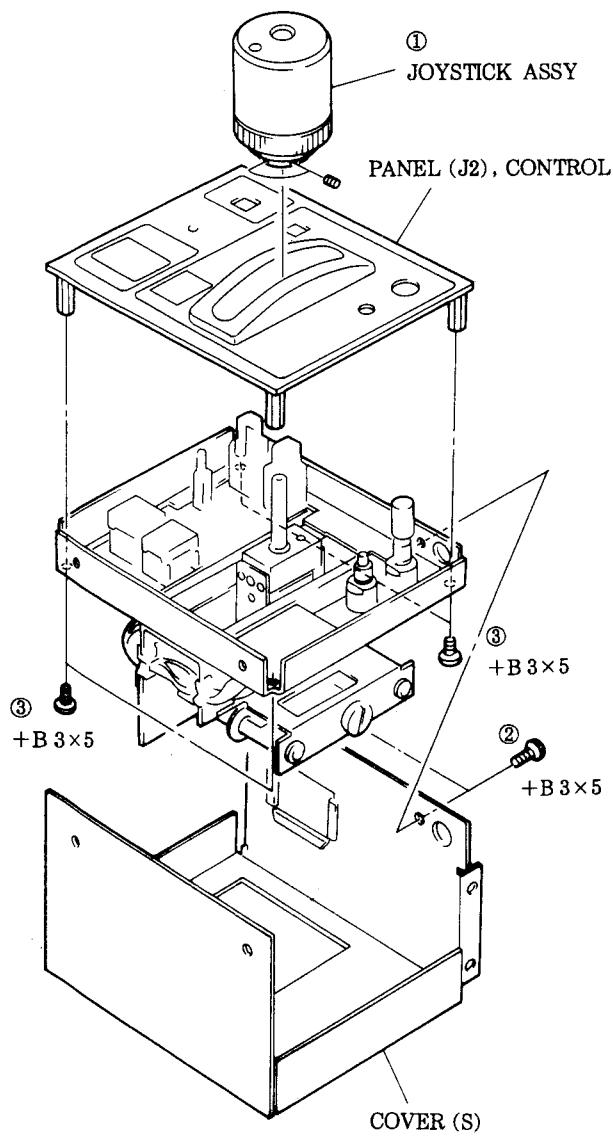


6. 取り付けは取り外しと逆の手順で行います。

### 3-1-3. コントロールパネルの外し方

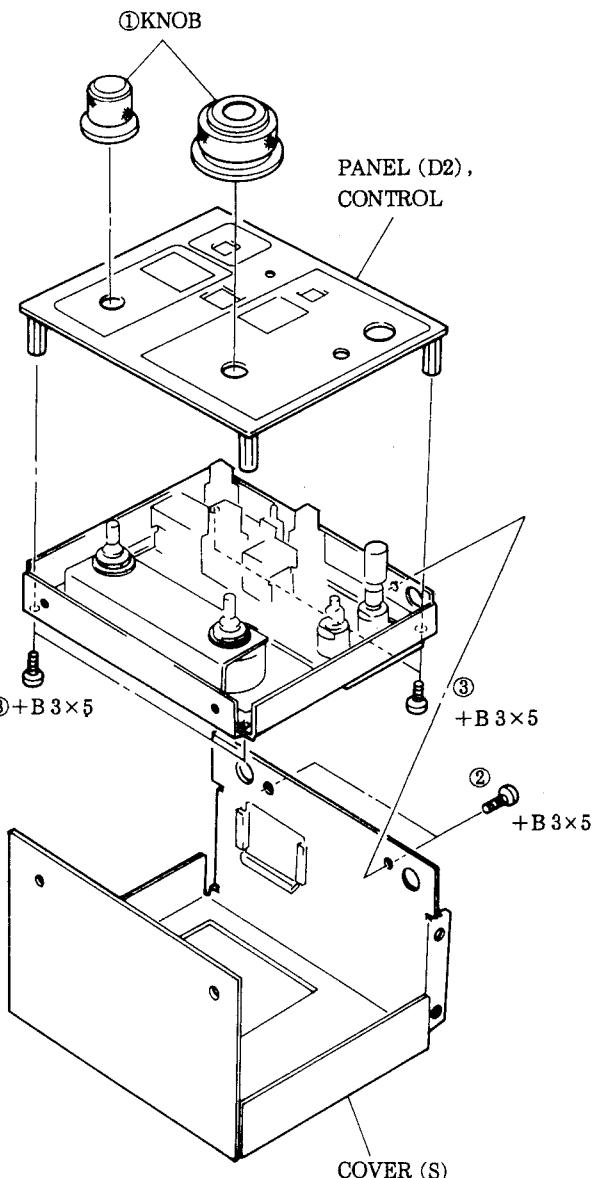
[RCP-3720]

- ①3-1-2. ジョイスティックボリュームの交換方法を参照してジョイスティック ASSY を外します。
- ②ねじ (+B 3×5) 2本を外して COVER (S) を外します。
- ③ねじ (+B 3×5) 4本を外して, CONTROL PANEL (J2) を外します。



[RCP-3721]

- ①KNOB 2個を外します。
- ②ねじ (+B 3×5) 2本を外して COVER (S) を外します。
- ③ねじ (+B 3×5) 4本を外して CONTROL PANEL (D2) を外します。



### 3-2. サービス上の注意事項

#### 3-2-1. PROM IC

PROM ICにはオリジナル品名の末尾にそのプログラムの名称が記載されています。又、バージョン変更された場合、この末尾の名称が変わります。オリジナル品名のみ（プログラム化されていない）は絶対に使用しないこと。

尚、各基板に使われているICは全てソケット化しています。

#### 3-2-2. 補修用部品の注意事項

##### (1) 安全重要部品

回路図、分解図、電気部品表中、△印および■で囲まれた部品は安全性を維持するために重要な部品です。従って、これらの部品を交換するには必ず指定の部品と交換して下さい。

##### (2) 部品の共通化

ソニーから供給される部品はセットに実装されているものと異なることがあります。これは部品の共通化、改良等によるものです。分解図や電気部品表中には現時点での共通化された部品が記載されています。

##### (3) 部品在庫

分解図、電気部品表中、SP欄がSで示されている部品は常時在庫しています。

SP欄が“O”で示されている部品は交換頻度が低い部品であるので在庫しないことがあります、納期が長くなることがあります。

##### (4) コンデンサ、インダクタ、抵抗の単位

回路図、分解図、電気部品表中、特に明記したものをお除き、下記の単位は省略されています。

コンデンサ:  $\mu F$

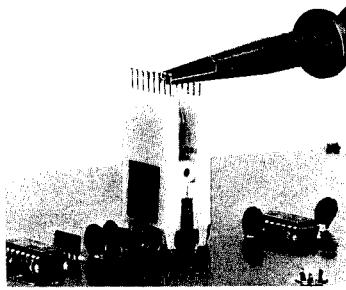
インダクタ:  $\mu H$

抵抗 :  $\Omega$

#### 3-2-3. 治工具

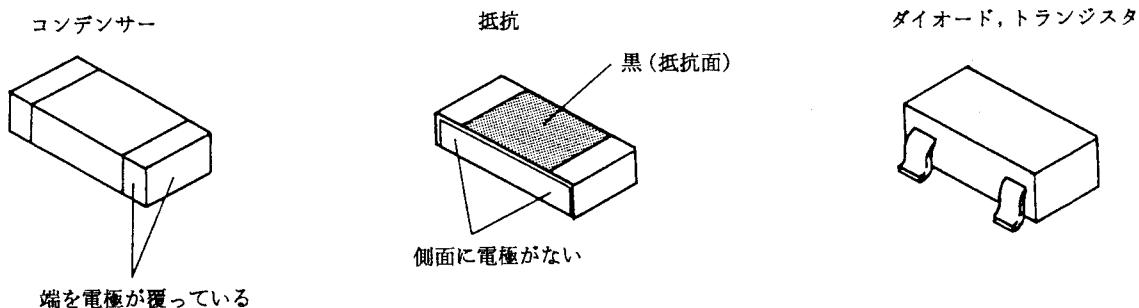
##### ICテストクリップ

TC-16 ソニー部品番号 J-6041-770-A  
TC-20 ソニー部品番号 J-6041-780-A



チェック、調整時にDIPタイプICの足にオシロスコープのプローブをかけるのに便利です。

### 3-2-4. チップ部品交換時の注意事項



用意する治具: 20 W 程度の半田ゴテ (可能ならば、コテの温度が  $270^{\circ} \pm 10^{\circ}\text{C}$  にコントロールできる温度コントローラーを使用する。)  
編組線 (ソルダートール)  
半田 (0.6 mm 径のものが望ましい)  
ピンセット

半田付け条件: コテ温度  $270^{\circ} \pm 10^{\circ}\text{C}$   
端子1か所を2秒以内に半田付けすること。

#### 手順

1. 抵抗又はコンデンサーを外す場合は、半田ゴテの先をチップ部品の上にのせて部品を加熱し、半田が溶けた状態で横にずらして外します。
2. ダイオード又はトランジスターの場合は、チップ部品の片側に足2本が出ている方を同時に加熱し、半田が溶けたら部品を上に起こして足2本を外します。次にもう片方の足を外すようにします。
3. 外した後、ランド表面を平らにするために、編組線を使って半田を吸い取って下さい。
4. 取り外した部分のパターンはがれ、隣接半田付け部のダメージ、ブリッジなどがないことを目視にて確認します。
5. パターンにうすく予備半田します。
6. 新しいチップ部品をパターンにのせ両端を半田付けします

取り外したチップ部品は再度使用しないこと。

詳しくは、ソニー技術推進部発行の **チップ・マニュアル** ソニー部品番号 9-963-089-01 を参照して下さい。



## SECTION 3

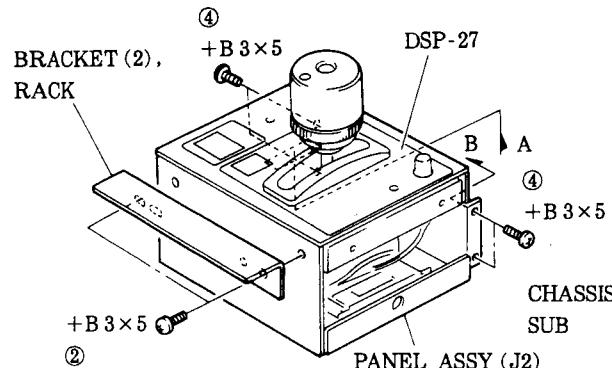
### SERVICE INFORMATION

#### 3-1. REPLACEMENT OF MAIN PARTS

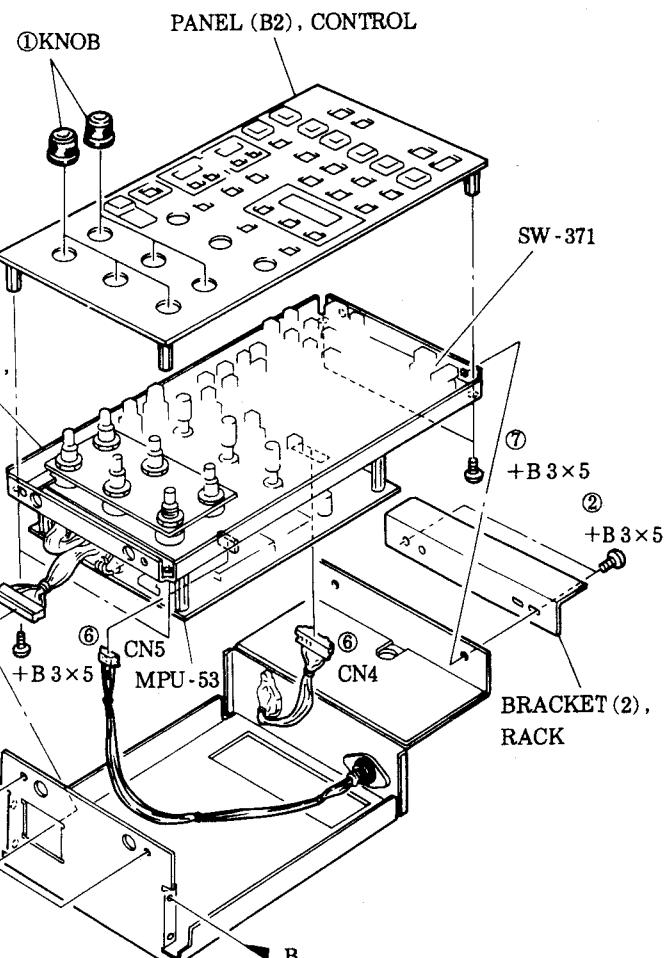
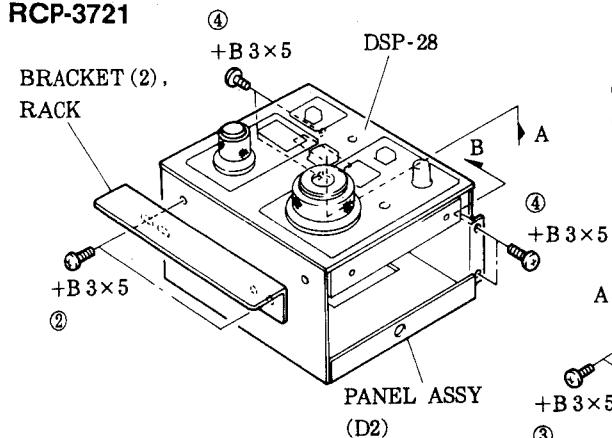
##### 3-1-1. Cabinet Removal

- ① Remove six knobs.
- ② Remove two screws (+B3×5) and remove RACK BRACKET (2) respectively.
- ③ Remove two screws (+B3×5) securing SUB CHASSIS (B2).
- ④ Remove four screws (+B3×5) and remove PANEL ASSY (J2). (only for RCP-3720)  
Remove four screws (+B3×5) and remove PANEL ASSY (D2). (only for RCP-3721)
- ⑤ Disconnect the connector CN1 on the DSP-27 board.  
(only for RCP-3720)  
Disconnect the connector CN1 on the DSP-28 board.  
(only for RCP-3721)
- ⑥ Disconnect two connectors, CN5 on the SW-371 board and CN4 on the MPU-53 board.
- ⑦ Remove four screws (+B3×5) and remove CONTROL PANEL (B2).

**RCP-3720**

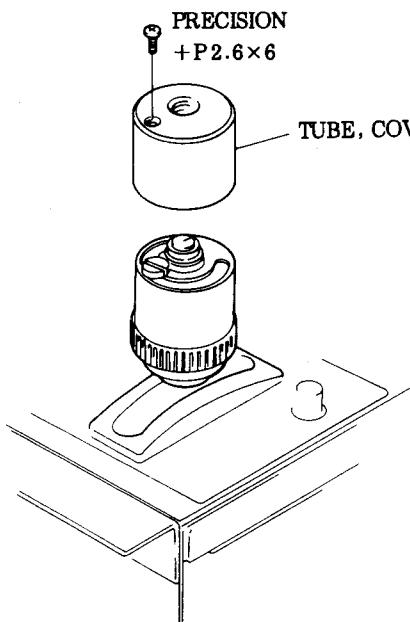


**RCP-3721**

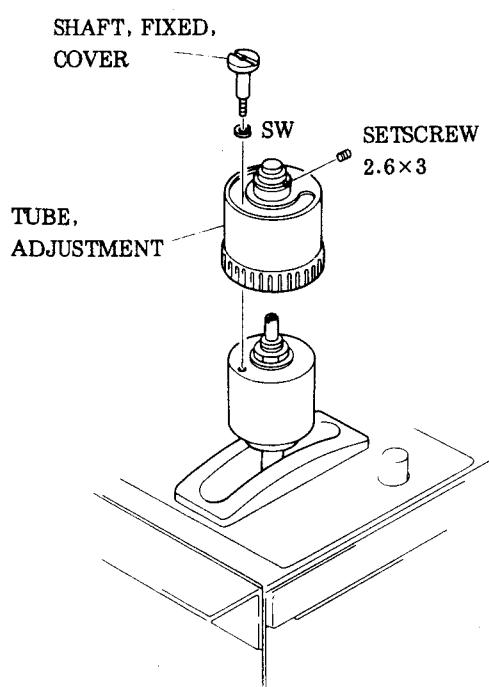


### 3-1-2. Replacement of Joystick Control (only for RCP-3720)

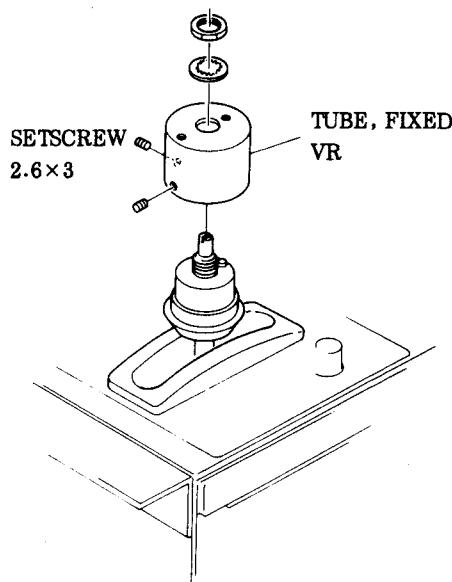
1 Remove the screw (PRECISION +P2.6×6) and remove COVER TUBE.



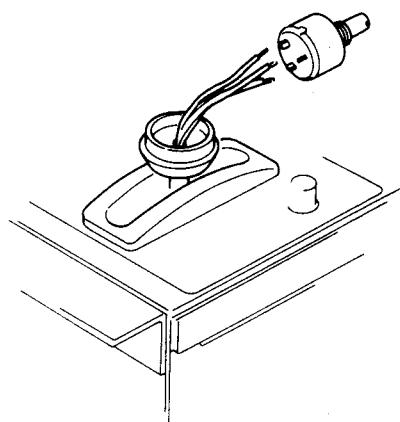
2 Unscrew COVER FIXED SHAFT. Remove the set-screw (2.6×3) and remove ADJUSTMENT TUBE.



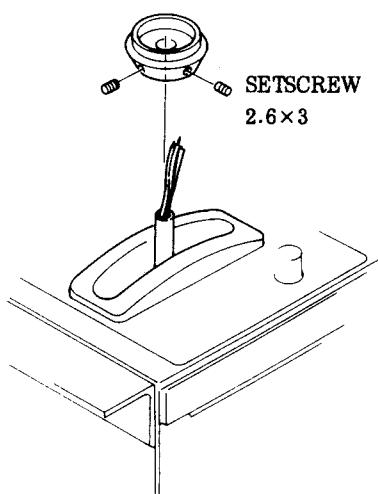
3 Remove the nut securing the control and remove the setscrew (2.6×3). VR FIXED TUBE will be removed.



4 Desolder harness connected to the control.



5 When removing CONTROL PANEL (J2), remove two setscrews (2.6×3) and remove LEVER FIXED TUBE.

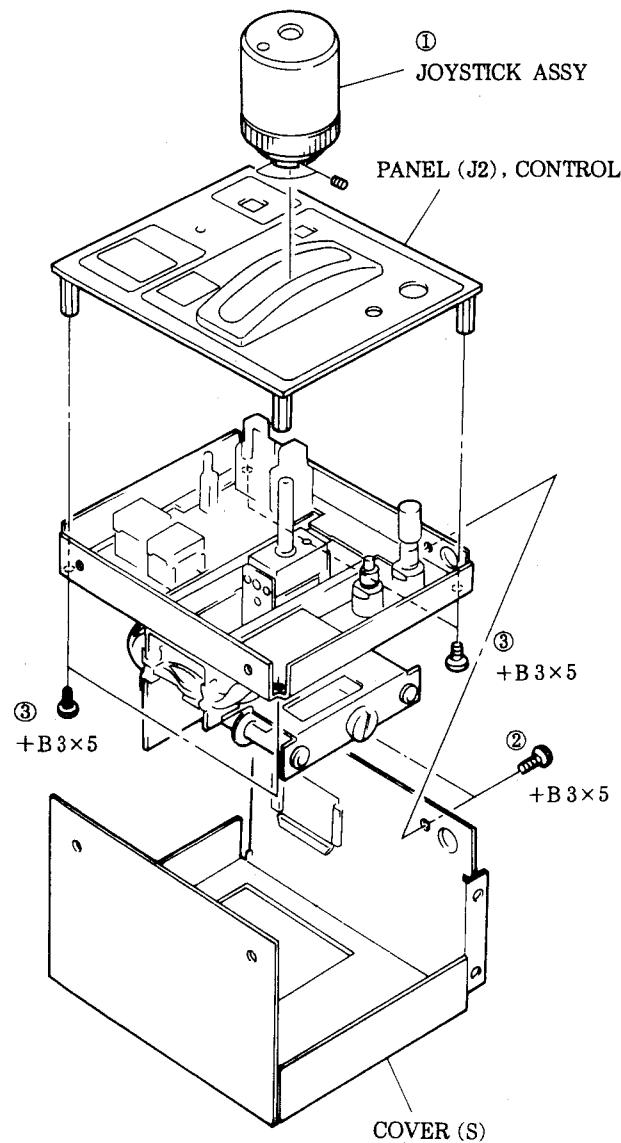


6 When mounting a new control, reverse the procedures for removal.

### 3-1-3 Removal of Control Panels

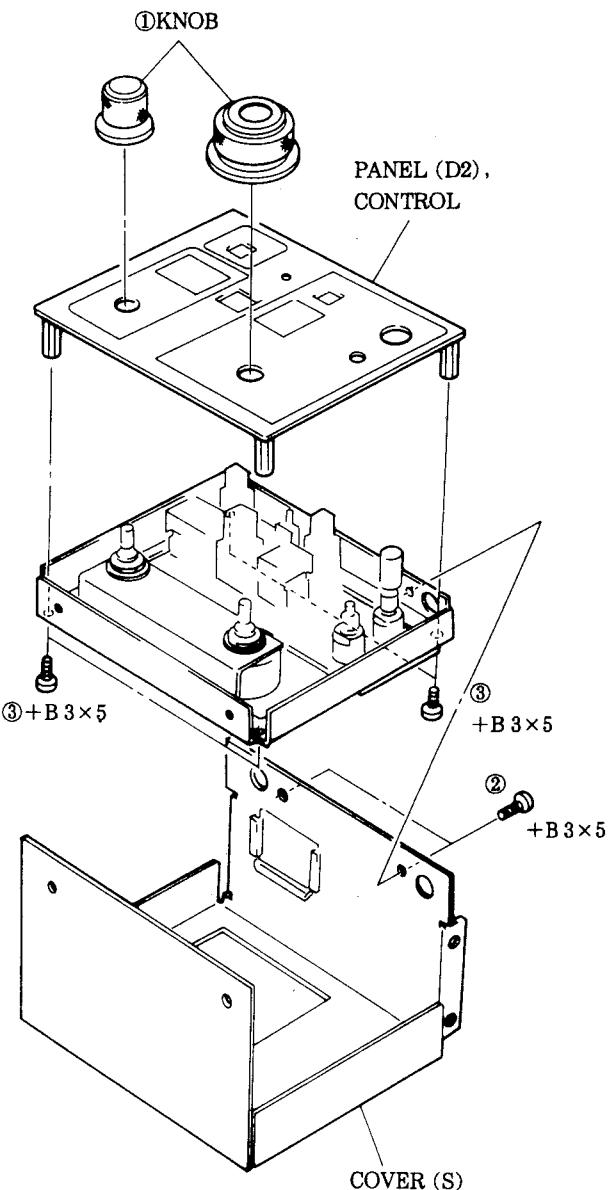
#### [RCP-3720]

- ① Remove joystick ASSY, referring to Section 3-1-2.  
Replacement of Joystick Control.
- ② Remove two screws (+B3×5) and remove COVER (S).
- ③ Remove four screws (+B3×5) and remove CONTROL PANEL (J2).



#### [RCP-3721]

- ① Remove two knobs.
- ② Remove two screws (+B3×5) and remove COVER (S)
- ③ Remove four screws (+B3×5) and remove CONTROL PANEL (D2).



## 3-2. NOTE ON MAINTENANCE SERVICES

### 3-2-1. PROM IC

Each PROM IC on the PC board has a suffix to its original designation. This suffix may change according to improvement of IC. Never use an IC having no suffix to its original designation, because its memory has not been programmed. Each PROM IC is mounted to the PC board via socket.

### 3-2-2. Note On Replacement Parts

#### 1. Safety Related on Components Warning

Components identified by shading marked with  $\Delta$  on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony Parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

#### 2. Standardization of Parts

Replace Parts that are supplied from Sony Parts Center can sometimes have different shape and external appearance than what are actually used in equipment. This is due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts."

- This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present."
- Regarding engineering parts and diagrams changes in our engineering department, refer Sony service bulletins and service manual supplements.

#### 3. Stocked of Parts

The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Order for parts marked with "O" will be proceed, but allow for additional delivery time.

#### 4. Units of Capacitors, Inductors, and Resistors

The following units are omitted in the schematic diagrams, exploded views, and electrical parts lists unless otherwise specified;

Capacitor :  $\mu\text{F}$

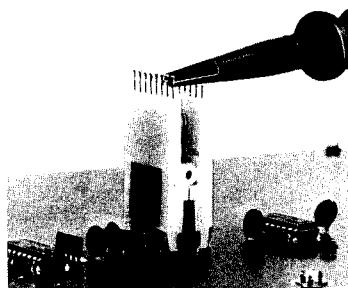
Inductor :  $\mu\text{H}$

Resistor :  $\Omega$

### 3-2-3. Fixture

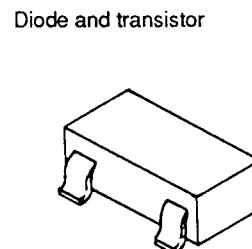
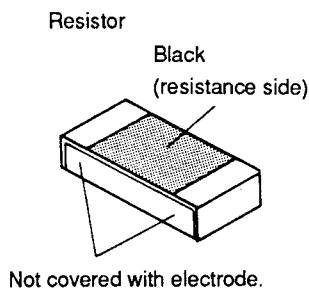
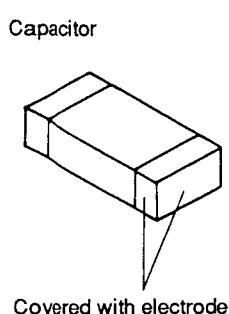
#### IC Test Clip

TC-16 Sony Parts No. J-6041-770-A  
TC-16 Sony Parts No. J-6041-780-A



This clip is convenient for contacting an oscilloscope probe with each leg of DIP type IC when the IC is checked and adjusted.

### 3-2-4 Replacement of Chip Parts



#### Tools required

- Soldering iron of approx. 20W (Use a temperature controller, if possible, which can control the iron temperature to  $270 \pm 10^\circ\text{C}$ .)
- Desoldering metal braid (Parts No. 7-641-300-81)
- Solder (A solder of 0.6mm in diameter is recommended.)
- Tweezers

#### Soldering conditions

- Iron temperature of  $270 \pm 10^\circ\text{C}$
- Soldering should be performed within two seconds.

#### Procedures

1. To remove a resistor or capacito, place the tip of a soldering iron on chip parts to heat the parts, and then move it horizontally for removal while being desoldered. For removal of a diode or transistor, heat the one side, with two pins, of chip parts at the same time. Set the parts up when desoldered and remove two pins. And then remove the pin on another side.
2. Absorb solder by using a desoldering metal braid to smooth the land surface after removal.
3. Confirm by visual check that no trace is come off, no adjacent parts is damaged and no bridging occur.
4. Perform a thin pretinning on the trace.
5. Place new chip parts on the trace to solder its both sides.

**Note:** Do not reuse parts which have been removed.

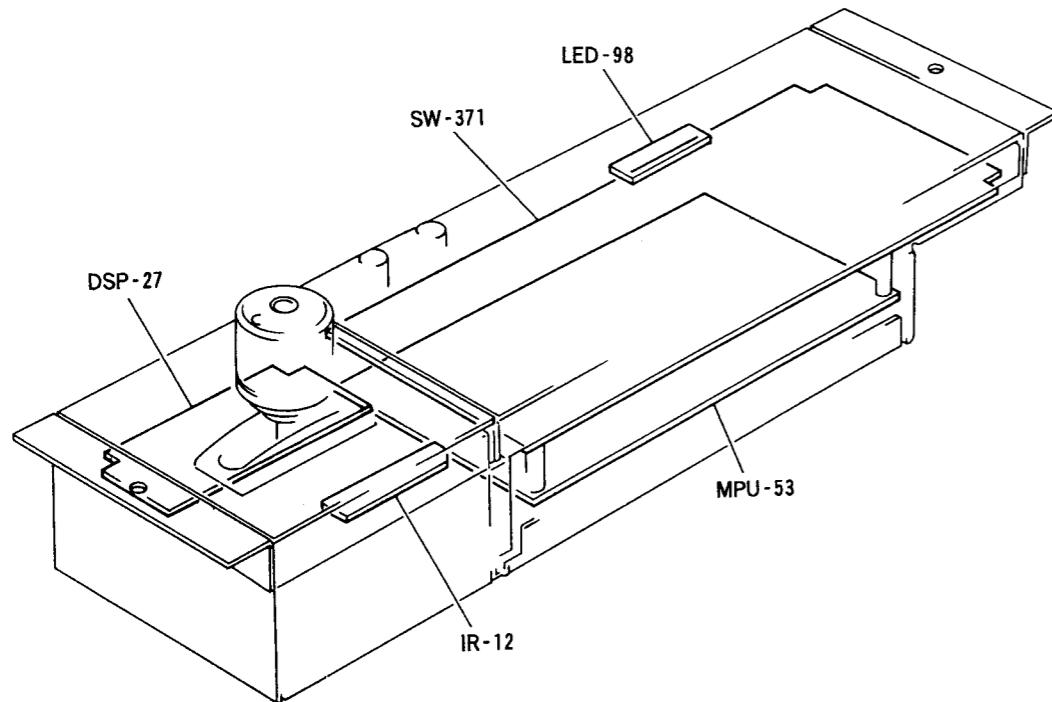
For details, see CHIP COMPONENTS manual (Parts No. 9-963-089-01) prepared by Sony Corporation.



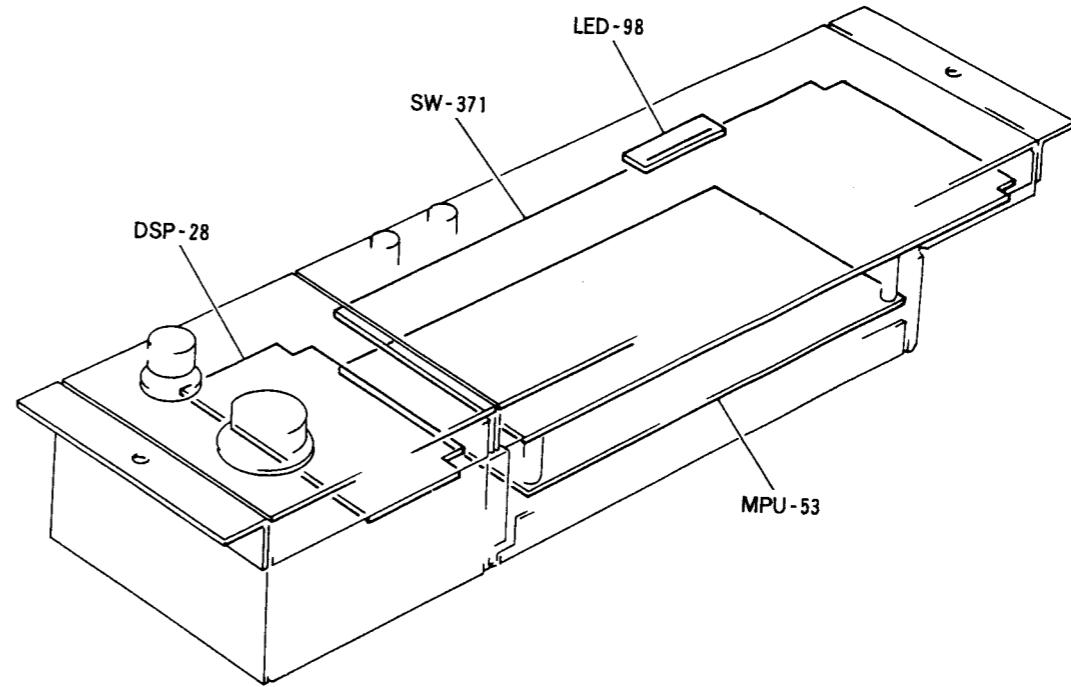
**SECTION A  
DIAGRAMS**

**BOARD LAYOUT**

RCP-3720



RCP-3721



RCP-3720/3721 (W. W)

**A-1**

**A**

**B**

**C**

**D**

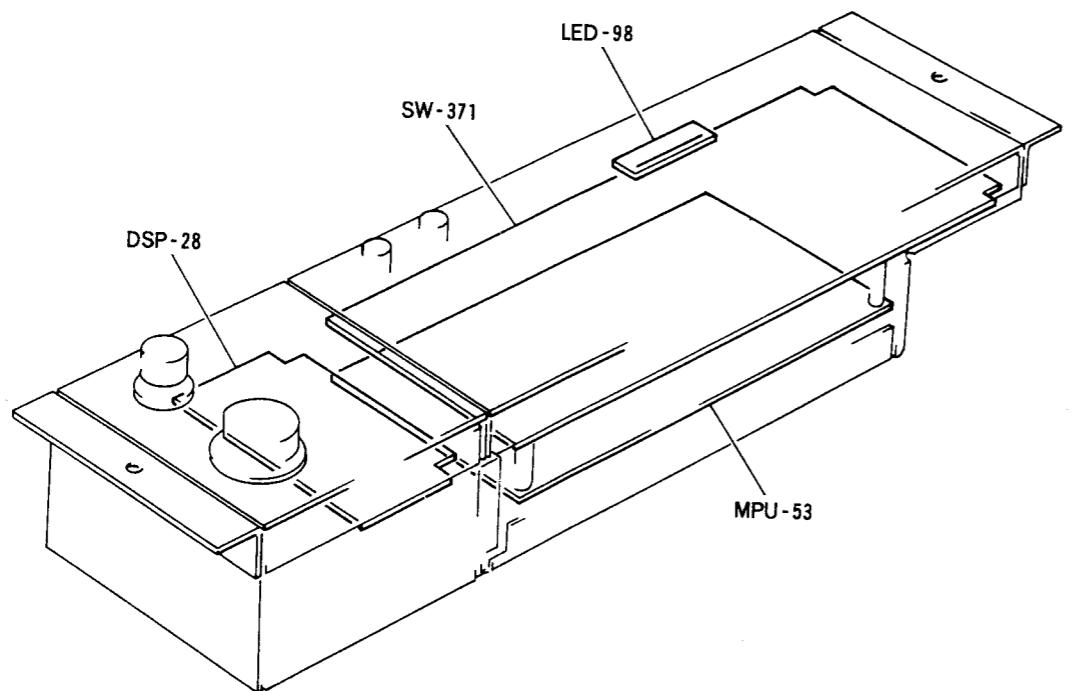
**E**

**F**

**G**

**A-2**

RCP-3721



A-2

D

E

F

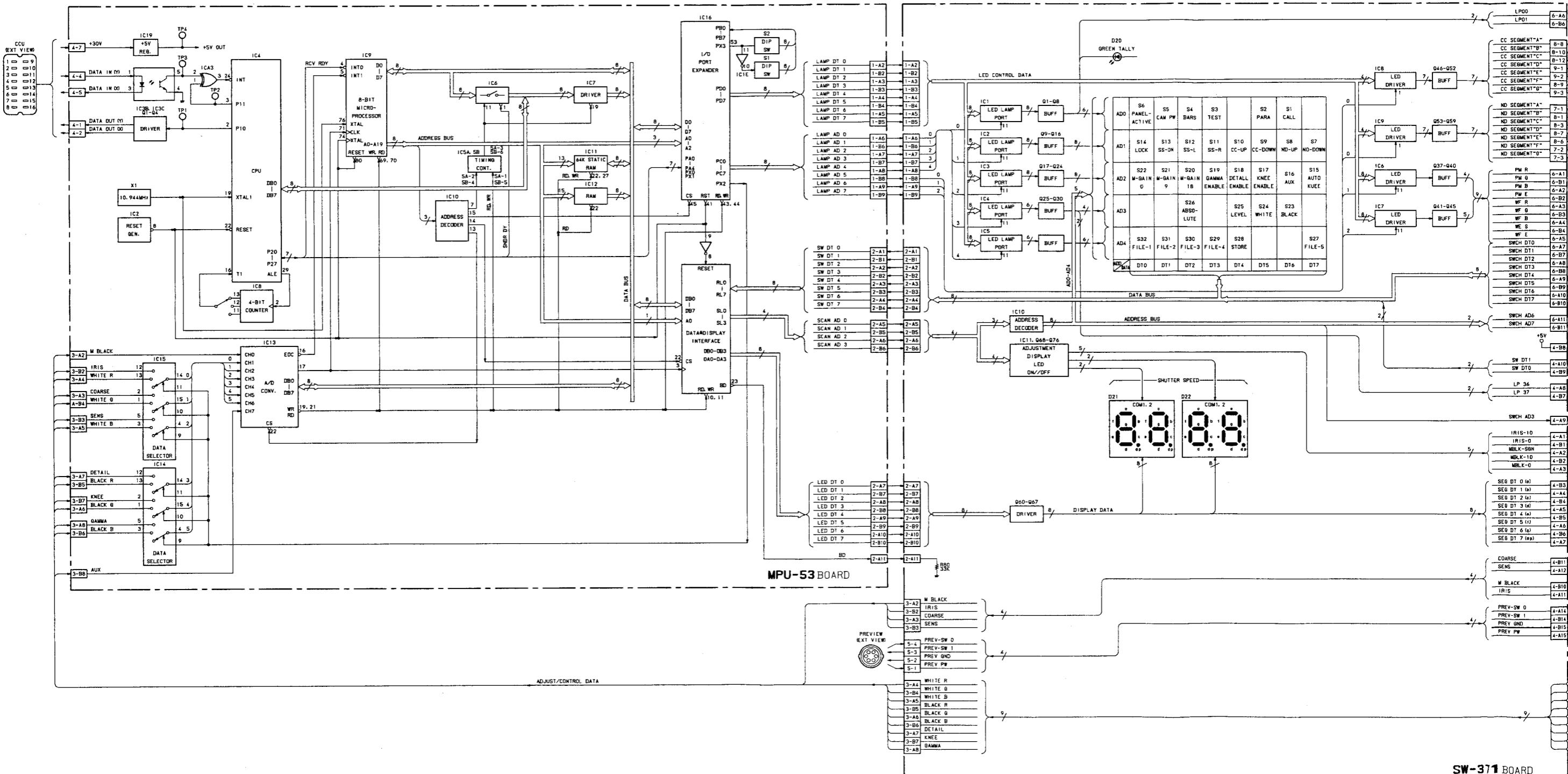
G

H

A-3

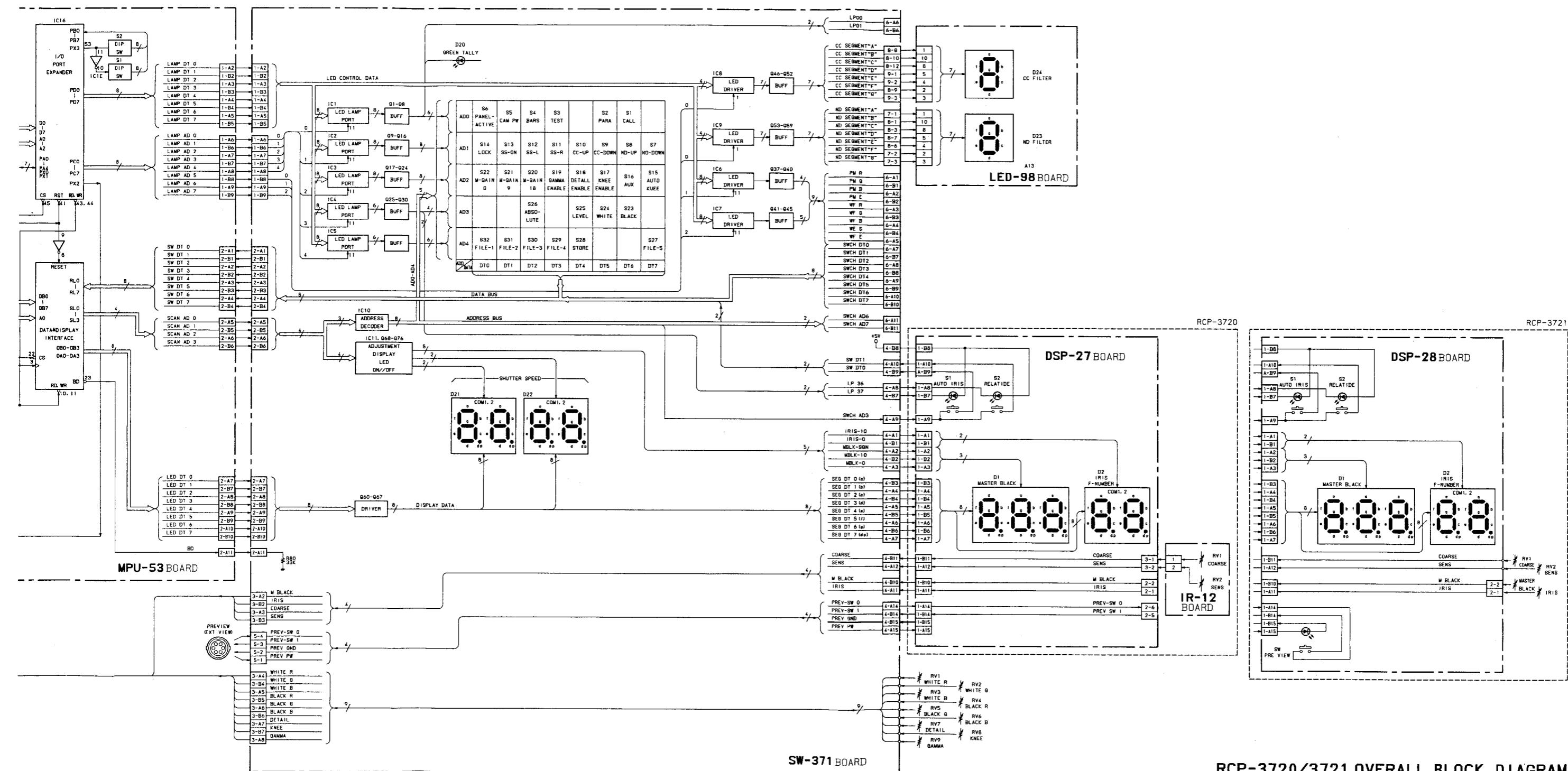
B-RCP3720/3721-BOARD LAYOUT

BLOCK DIAGRAM



A-4

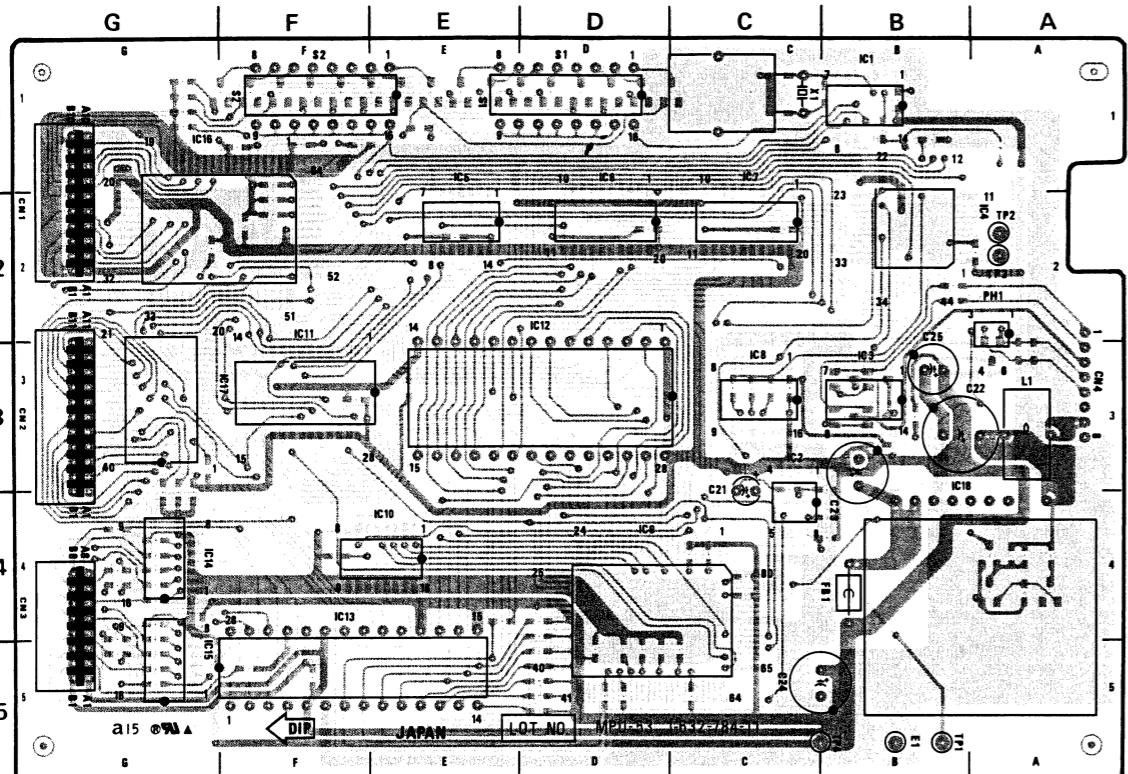
A-5



## RCP-3720/3721 OVERALL BLOCK DIAGRAM

FRAME (1/2) Ser No. 10001-10399

MPU-53 BOARD



1-632-784-11 SOLDERING SIDE

## MPU-53 (1-632-784-11)

CN1	G - 2	PH1	A - 2
CN2	G - 3		
CN3	G - 4	Q1	B - 3
CN4	A - 3	Q2	B - 3
D1	A - 3	Q3	B - 3
D2	C - 1	Q4	B - 3
D3	D - 1	Q5	A - 4
D4	D - 1	Q6	A - 4
D5	D - 1	S1	D - 1
D6	D - 1	S2	F - 1
D7	D - 1		
D8	E - 1	TP1	B - 5
D9	E - 1	TP2	A - 2
D10	E - 1	TP3	A - 2
D11	E - 1	TP4	B - 5
D12	E - 1		
D13	F - 1	X1	C - 1
D14	F - 1		
D15	F - 1		
D16	F - 1		
D17	F - 1		
D18	A - 4		
E1	B - 5		
F1	B - 4		
IC1	B - 1		
IC2	C - 3		
IC3	B - 3		
IC4	B - 2		
IC5	E - 2		
IC6	D - 2		
IC7	C - 2		
IC8	C - 3		
IC9	D - 4		
IC10	E - 4		
IC11	F - 3		
IC12	D - 3		
IC13	F - 5		
IC14	G - 4		
IC15	G - 5		
IC16	G - 1		
IC17	G - 3		
IC18	B - 4		

A-9 (a)

B-RCP3720/3721-FRAME#1/MOUNT

A

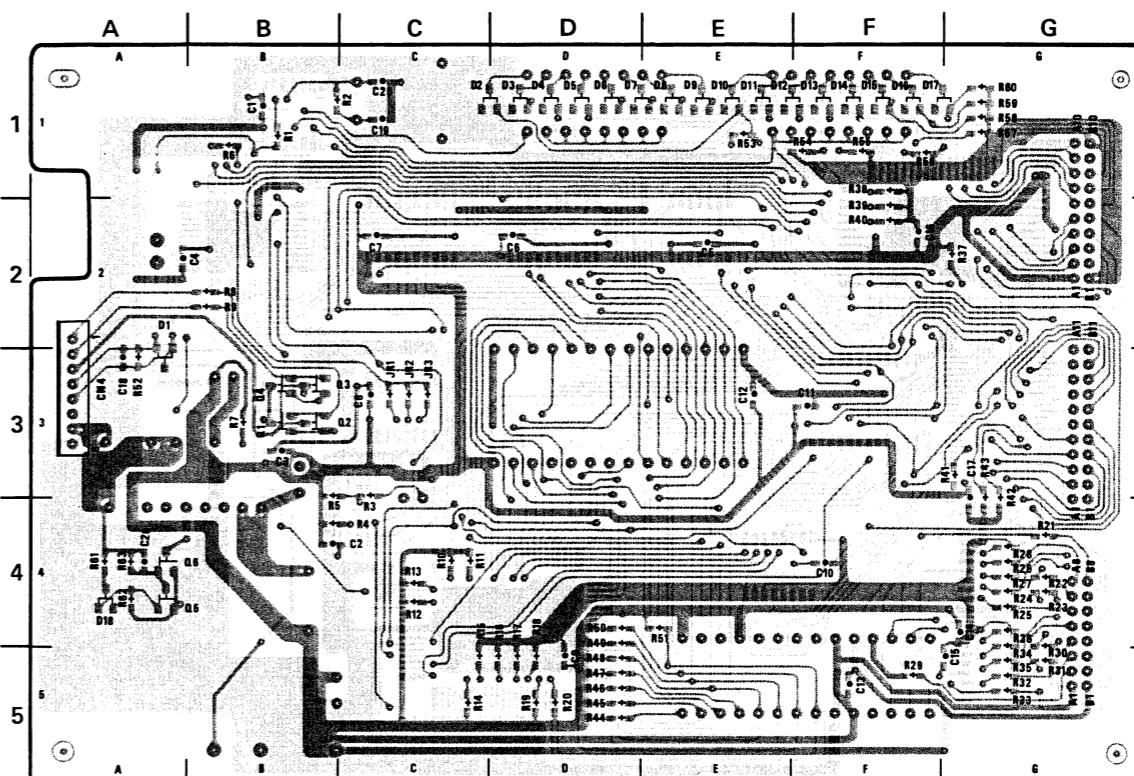
B

C

D

E

F



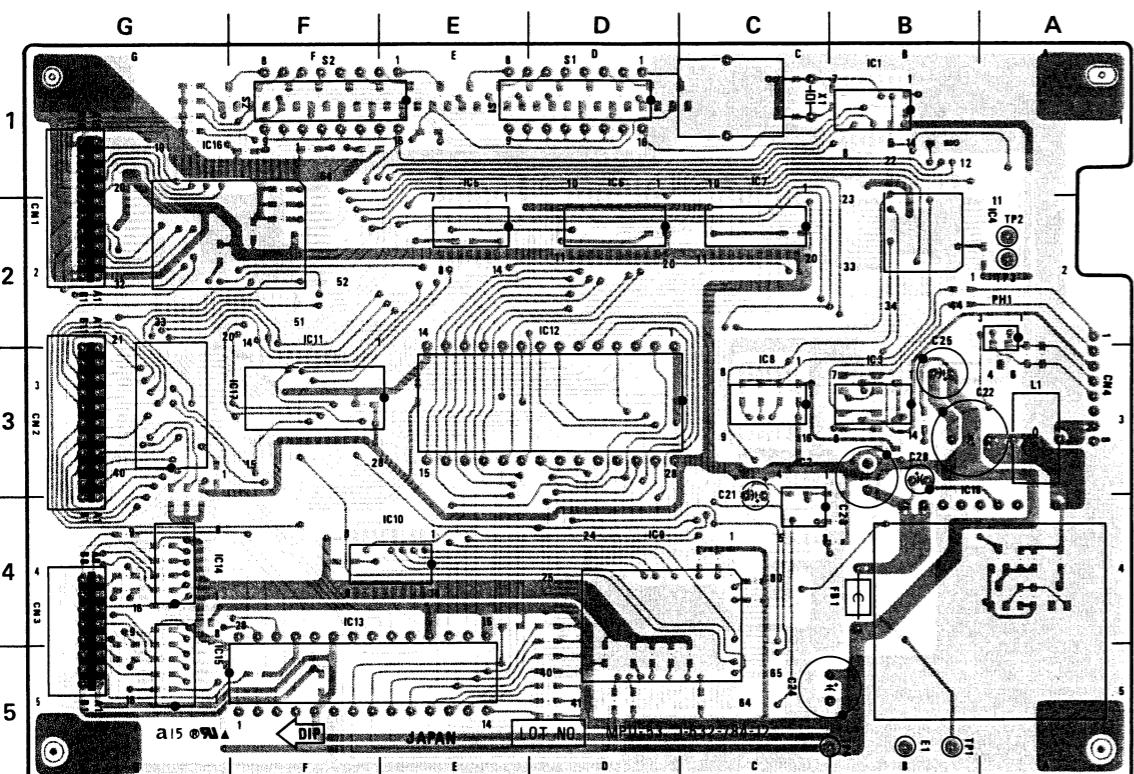
1-632-784-11 SOLDERING SIDE

A-10 (a)

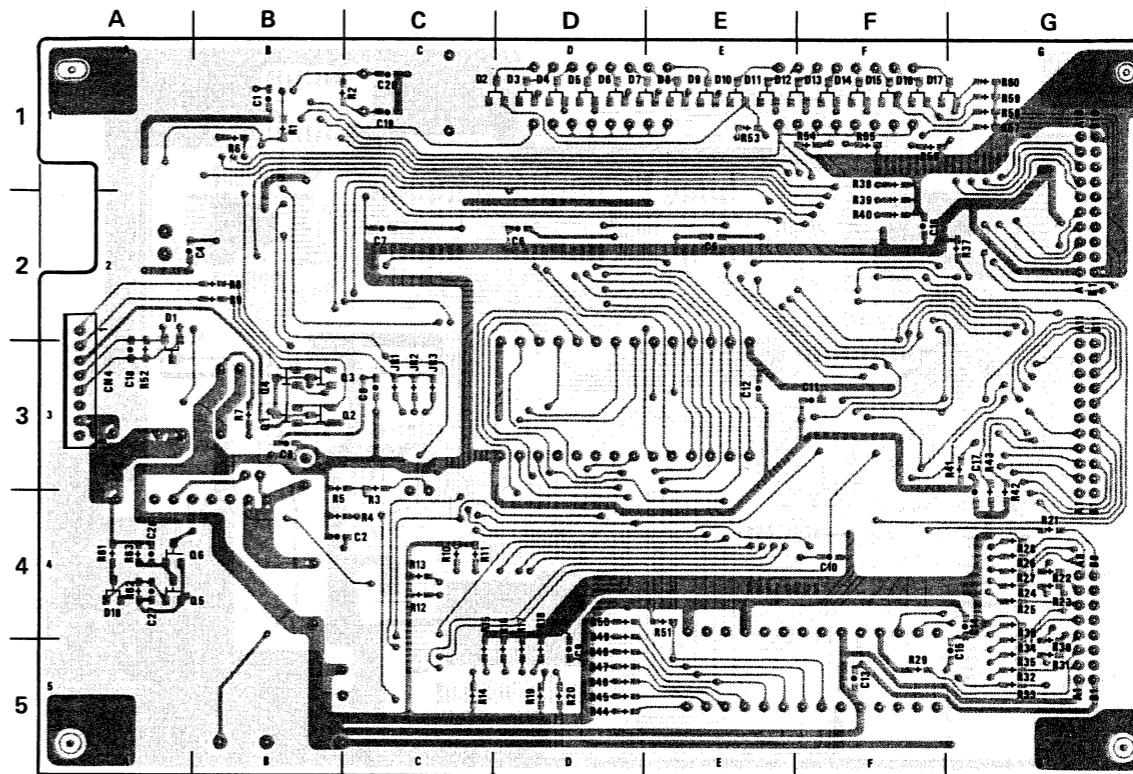
RCP-3720/3721 (W. W.)

FRAME (1/2) Ser No. 10401-11100 RCP-3720

MPU-53 BOARD



1-632-784-12 SOLDERING SIDE



1-632-784-12 SOLDERING SIDE

## MPU-53 (1-632-784-12)

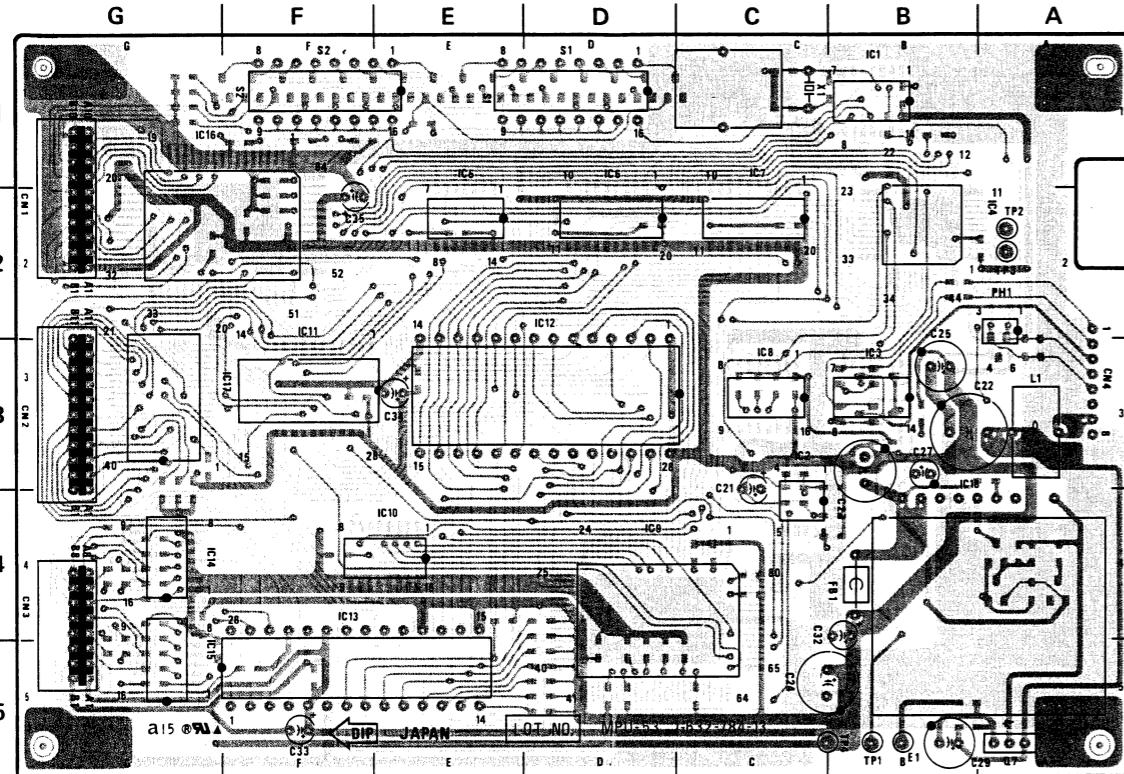
CN1	G - 2	PH1	A - 2
CN2	G - 3		
CN3	G - 4	Q1	B - 3
CN4	A - 3	Q2	B - 3
		Q3	B - 3
D1	A - 2	Q4	B - 3
D2	D - 1	Q5	A - 4
D3	D - 1	Q6	A - 4
D4	D - 1		
D5	D - 1	S1	D - 1
D6	D - 1	S2	F - 1
D7	D - 1		
D8	E - 1	TP1	B - 5
D9	E - 1	TP2	A - 2
D10	E - 1	TP3	A - 2
D11	E - 1	TP4	B - 5
D12	E - 1		
D13	F - 1	X1	C - 1
D14	F - 1		
D15	F - 1		
D16	F - 1		
D17	F - 1		
D18	A - 4		
E1	B - 5		
FBI	B - 4		
IC1	B - 1		
IC2	C - 3		
IC3	B - 3		
IC4	A - 2		
IC5	E - 1		
IC6	D - 1		
IC7	C - 1		
IC8	C - 3		
IC9	D - 4		
IC10	E - 4		
IC11	F - 2		
IC12	D - 2		
IC13	F - 4		
IC14	G - 4		
IC15	G - 5		
IC16	G - 1		
IC17	F - 3		
IC18	B - 3		

A-9 (b)

A-10 (b)

RCP-3720/3721 (W. W.)

FRAME (1/2)  
MPU-53 BOARD  
Ser No. 11101-11700 RCP-3720  
10401-10700 RCP-3721



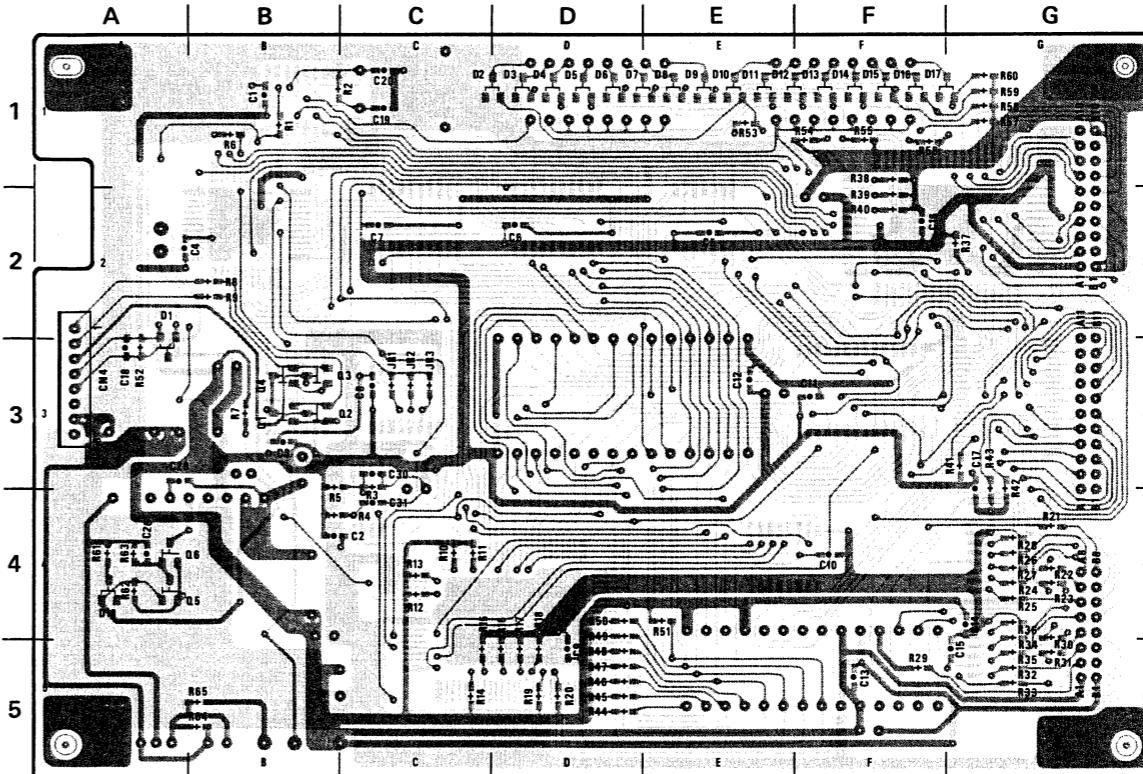
J-835-184-13 SOLDERING SIDE

## MPU-53 (1-632-784-13)

CN1	G - 2	PH1	A - 2
CN2	G - 3		
CN3	G - 4	Q1	B - 3
CN4	A - 3	Q2	B - 3
D1	A - 2	Q3	B - 3
D2	D - 1	Q4	B - 3
D3	D - 1	Q5	A - 4
D4	D - 1	Q6	A - 4
D5	D - 1	Q7	A - 5
D6	D - 1	S1	D - 1
D7	D - 1	S2	F - 1
D8	E - 1		
D9	E - 1	TP1	B - 5
D10	E - 1	TP2	A - 2
D11	E - 1	TP3	A - 2
D12	E - 1	TP4	B - 5
D13	F - 1		
D14	F - 1	X1	C - 1
D15	F - 1		
D16	F - 1		
D17	F - 1		
D18	A - 4		
E1	B - 5		
FBI	B - 4		
IC1	B - 1		
IC2	C - 3		
IC3	B - 3		
IC4	A - 2		
IC5	E - 1		
IC6	D - 1		
IC7	C - 1		
IC8	C - 3		
IC9	D - 4		
IC10	E - 4		
IC11	F - 2		
IC12	D - 2		
IC13	F - 4		
IC14	G - 4		
IC15	G - 5		
IC16	G - 1		
IC17	F - 3		
IC18	B - 3		

B-RCP3720/3721-FRAME#1/MOUNT

A-9 (c)



J-835-184-13 SOLDERING SIDE

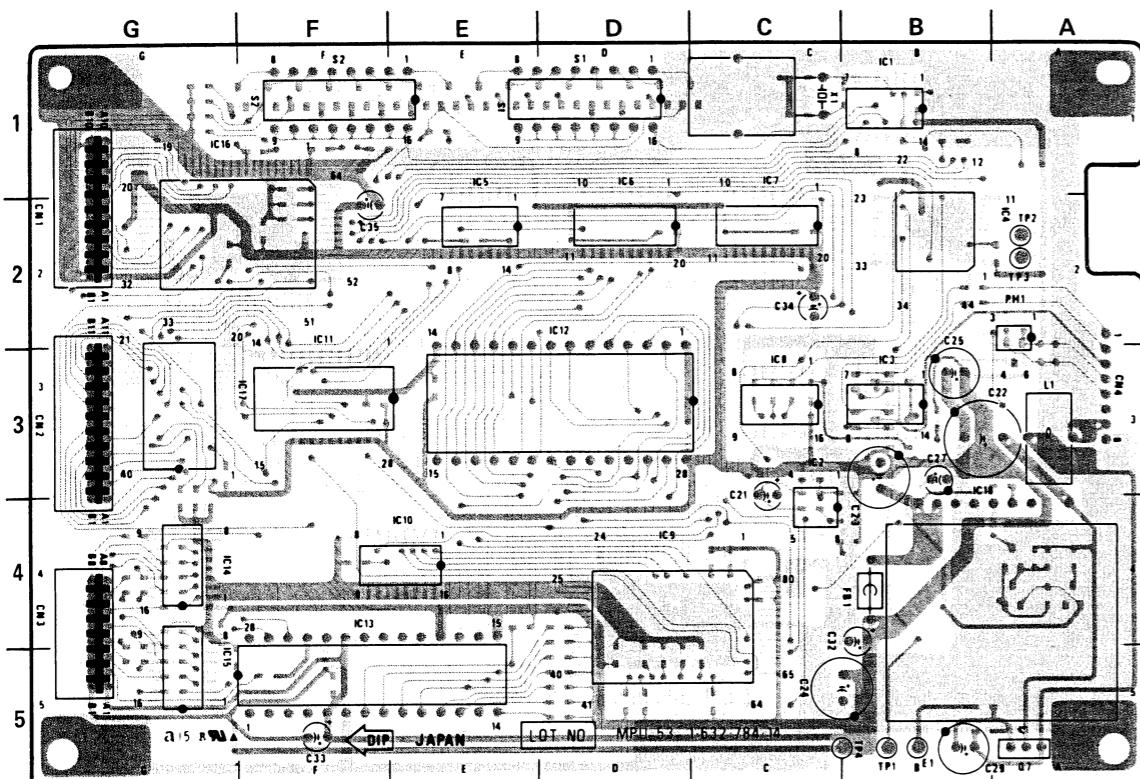
1-632-784-13 SOLDERING SIDE

A-10 (c)

RCP-3720/3721 (W.W.)

FRAME (1/2)  
MPU-53 BOARD

Ser No. 11701- RCP-3720  
10701- RCP-3721



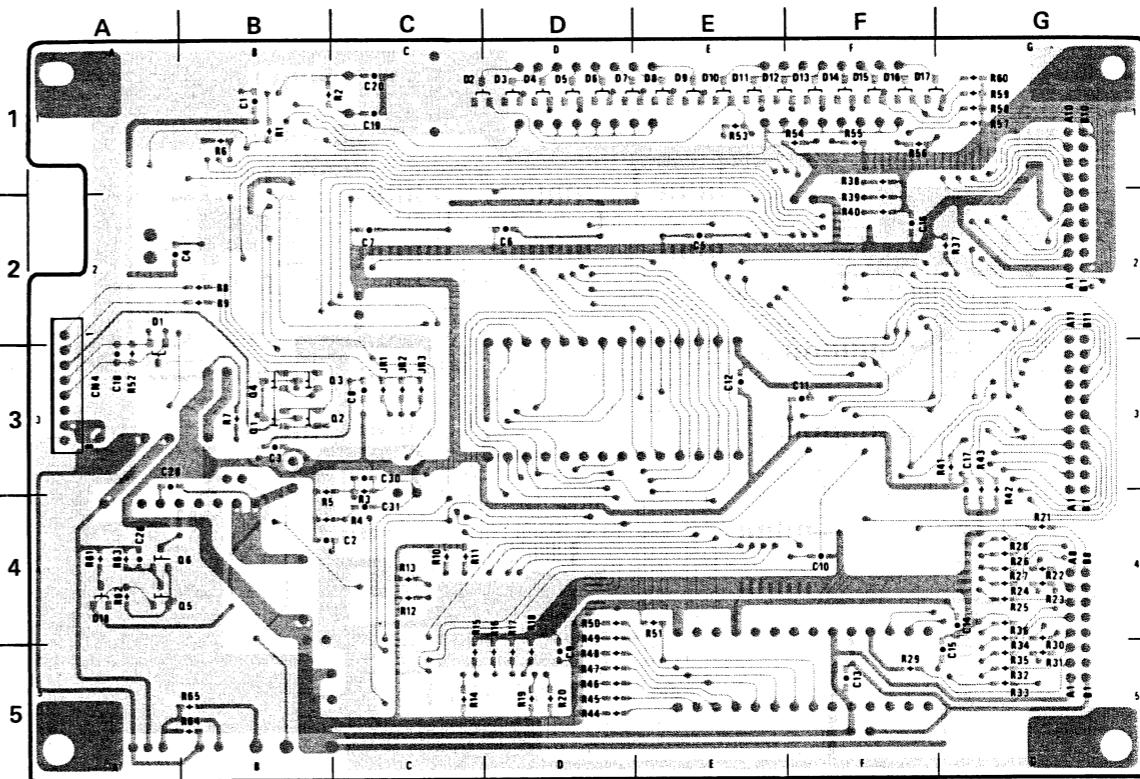
J-835-184-14 SOLDERING SIDE

MPU-53 (1-632-784-14)

CN1	G - 2	PH1	A - 2
CN2	G - 3		
CN3	G - 4	Q1	B - 3
CN4	A - 3	Q2	B - 3
D1	A - 2	Q3	B - 3
D2	D - 1	Q4	B - 3
D3	D - 1	Q5	A - 4
D4	D - 1	Q6	A - 4
D5	D - 1	Q7	A - 5
D6	D - 1	S1	D - 1
D7	D - 1	S2	F - 1
D8	E - 1		
D9	E - 1	TP1	B - 5
D10	E - 1	TP2	A - 2
D11	E - 1	TP3	A - 2
D12	E - 1	TP4	B - 5
D13	F - 1		
D14	F - 1	X1	C - 1
D15	F - 1		
D16	F - 1		
D17	F - 1		
D18	A - 4		
E1	B - 5		
FB1	B - 4		
IC1	B - 1		
IC2	C - 3		
IC3	B - 3		
IC4	A - 2		
IC5	E - 1		
IC6	D - 1		
IC7	C - 1		
IC8	C - 3		
IC9	D - 4		
IC10	E - 4		
IC11	F - 2		
IC12	D - 2		
IC13	F - 4		
IC14	G - 4		
IC15	G - 5		
IC16	G - 1		
IC17	F - 3		
IC18	B - 3		

[B-RCP3720/3721-FRAME#1/MOUNT]

A-9 (d)



1-632-784-14 SOLDERING SIDE

A-10 (d)

RCP-3720/3721 (W.W)

A

B

C

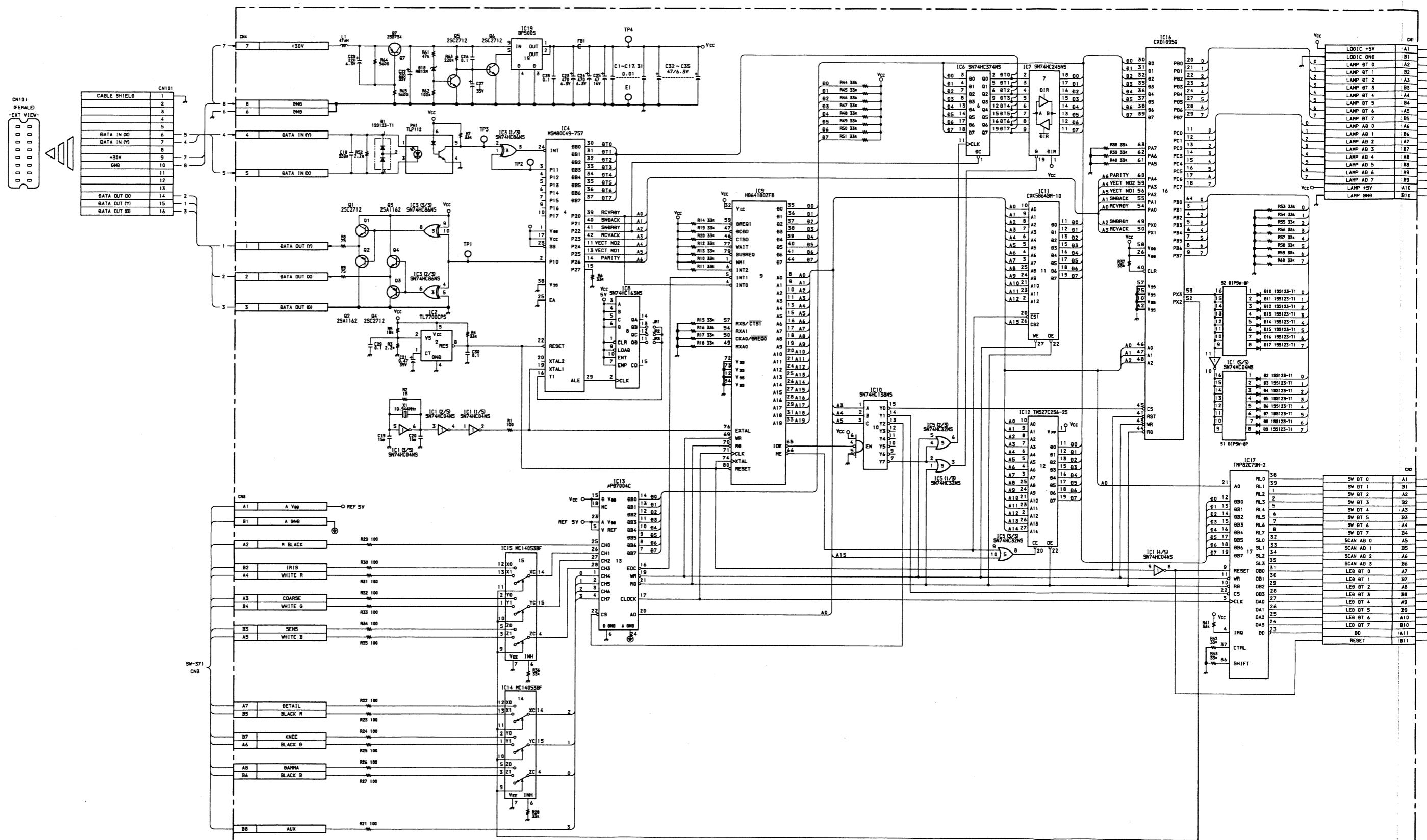
D

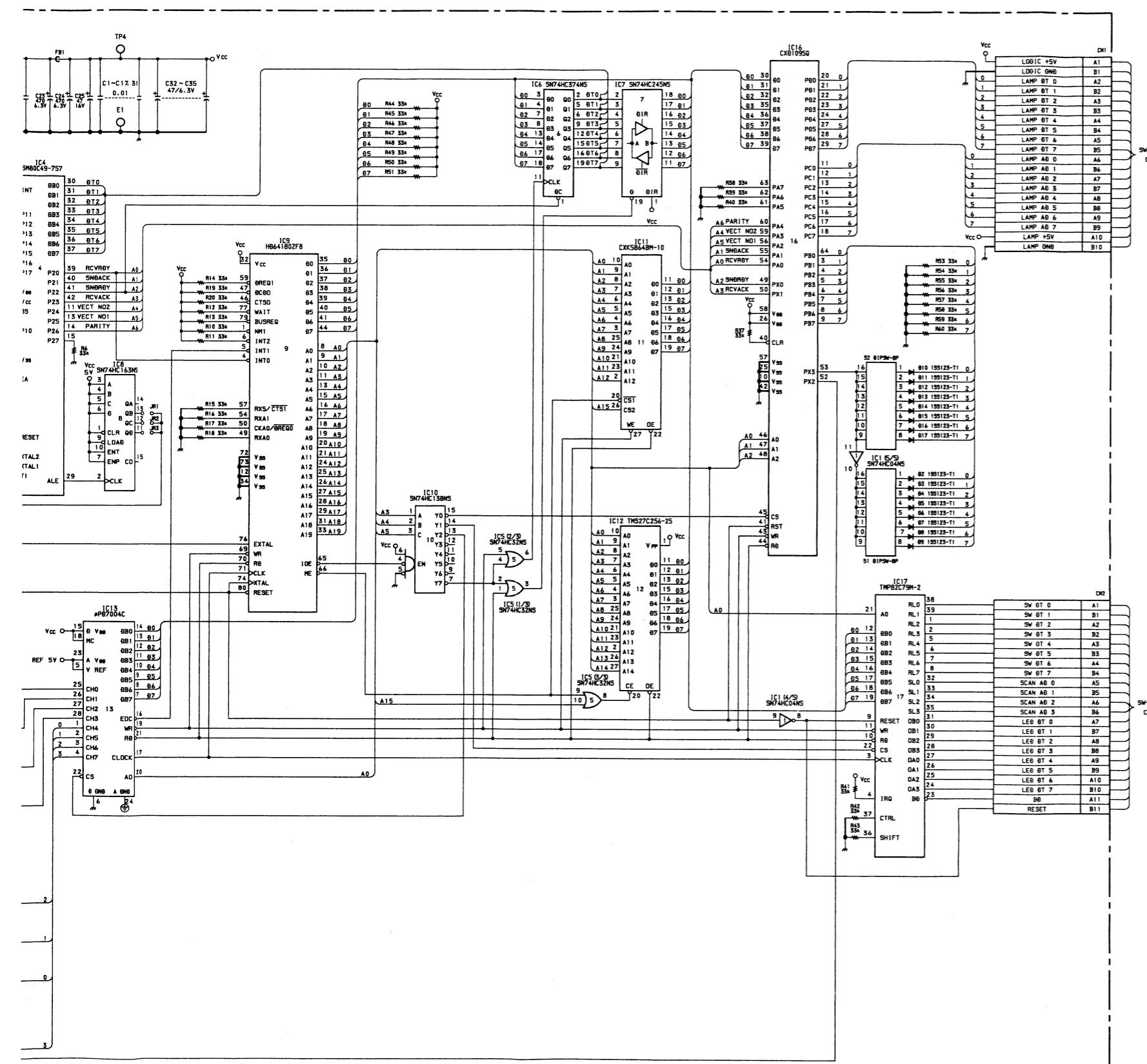
E

F

## FRAME WIRING (1/2)

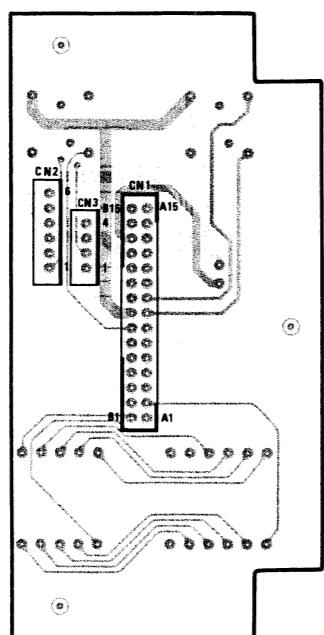
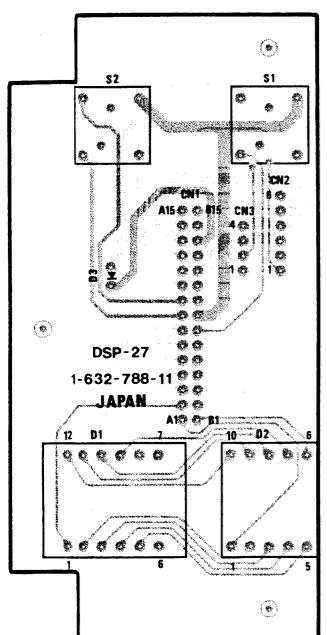
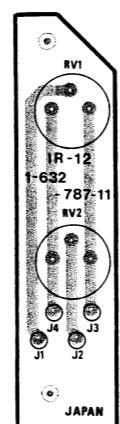
MPU-53 BOARD



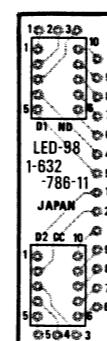


FRAME (2/2) Ser No. 10001-10399

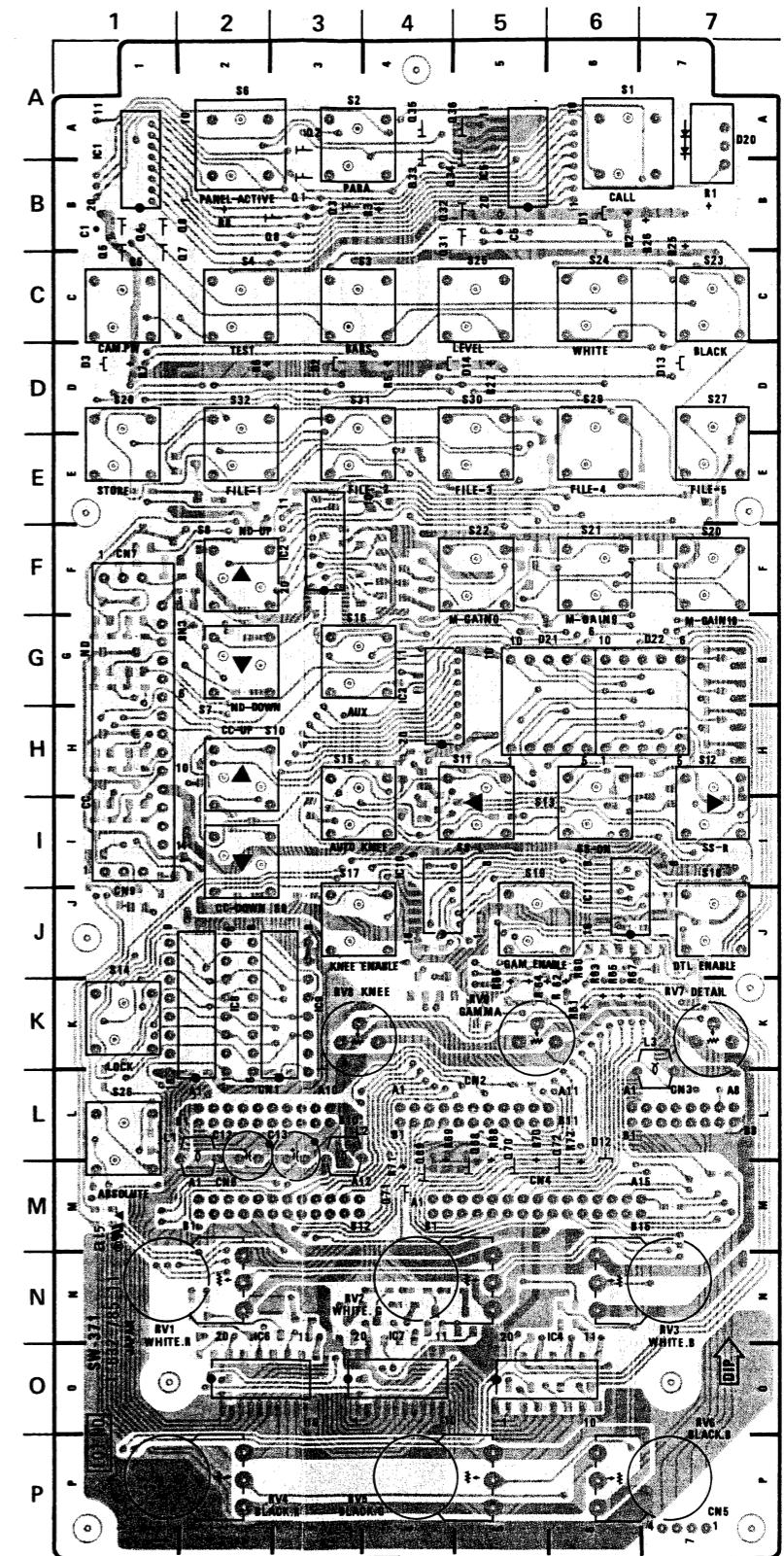
DSP-27 BOARD (FOR RCP-3720)

IR-12 BOARD  
(FOR RCP-3720)

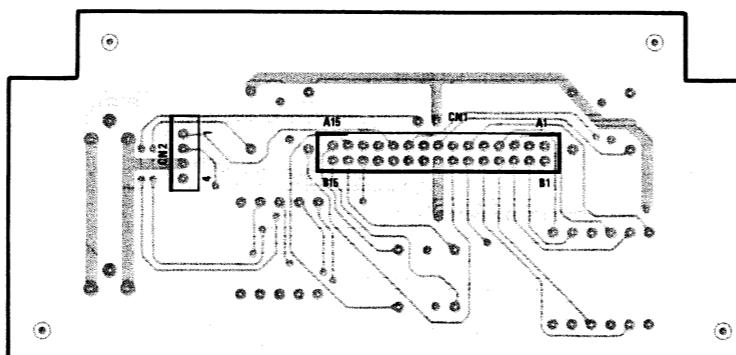
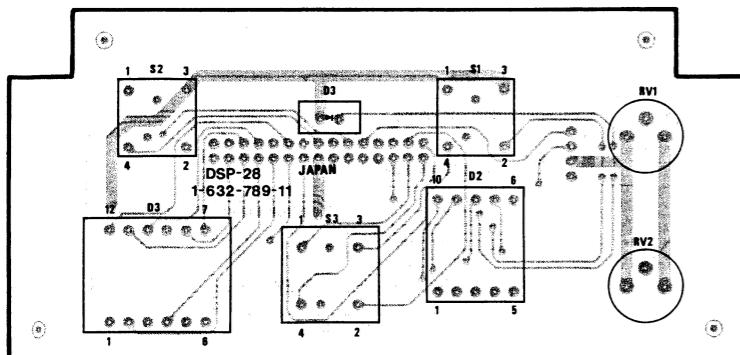
LED-98 BOARD



SW-371 BOARD



DSP-28 BOARD (FOR RCP-3721)



1-632-788-11 SOLDERING SIDE

1-632-789-11 SOLDERING SIDE

A-14 (a)

B-RCP3720/3721-FRAME #2/MOUNT

A

B

C

D

E

F

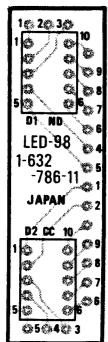
G

1-632-7

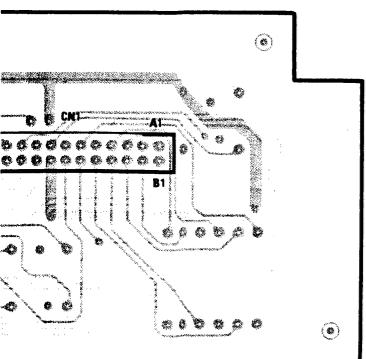
1-632-7 SOLDERING SIDE

A-15 (a)

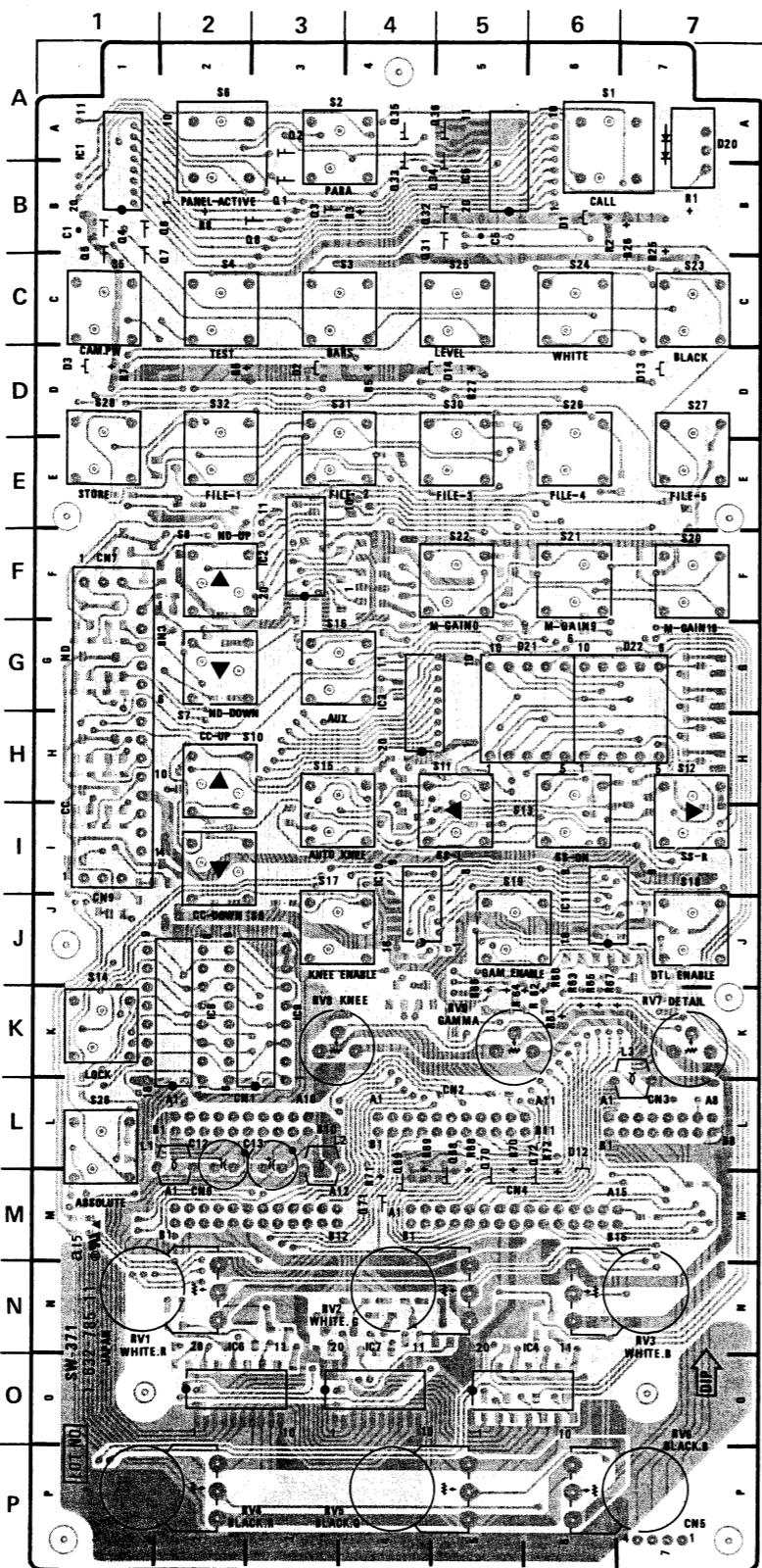
## LED-98 BOARD



J-632-785-11 SOLDERING SIDE



## SW-371 BOARD



J-632-785-11 SOLDERING SIDE

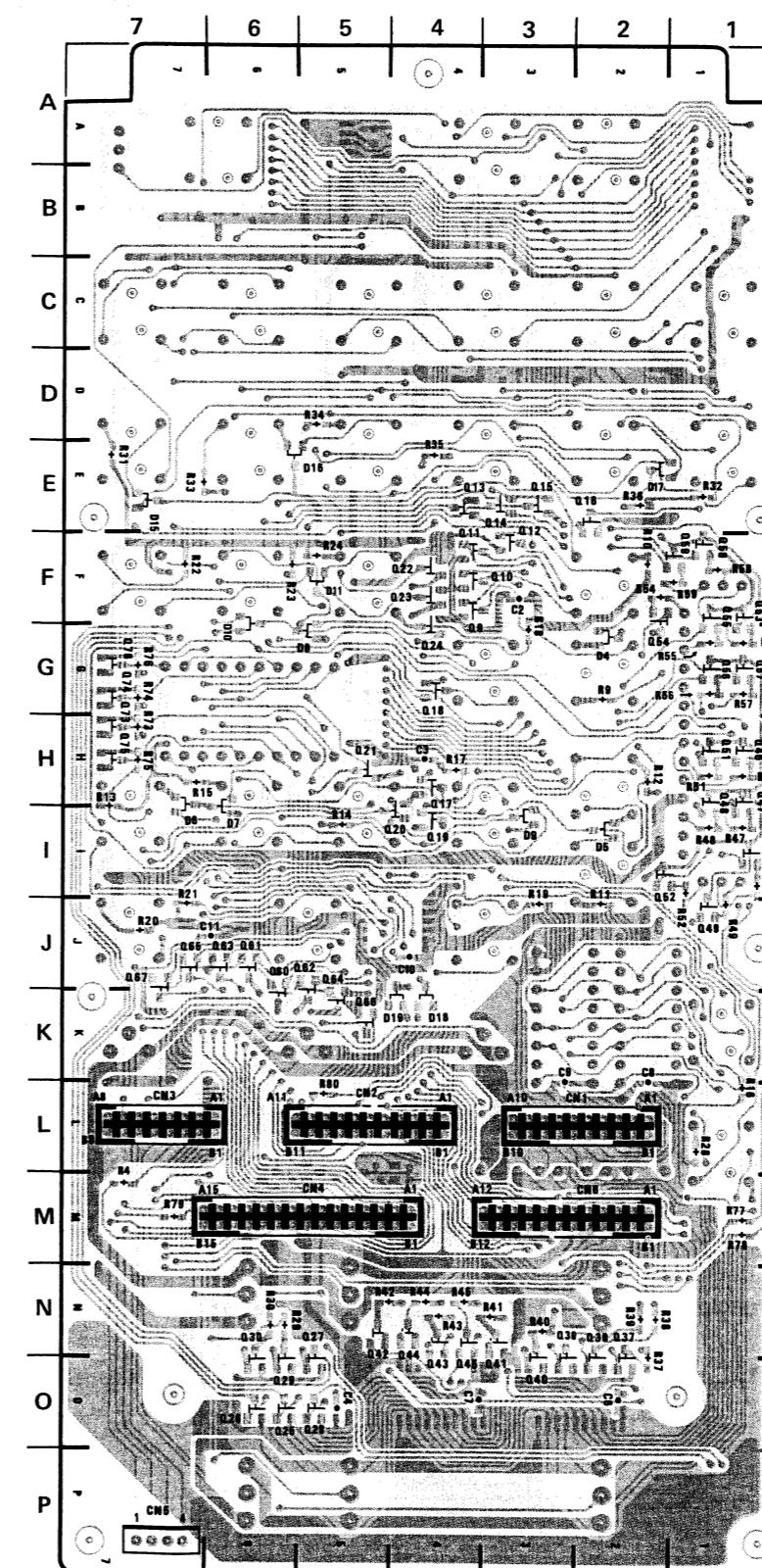
A-15 (a)

E

F

G

D



J-632-785-11 SOLDERING SIDE

A-16 (a)

RCP-3720/3721 (W. W.)

SW-371 (1-632-785-11)

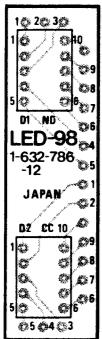
CN1	L - 2	Q44	N - 4
CN2	L - 5	Q45	N - 4
CN3	L - 7	Q46	H - 1
CN4	M - 5	Q47	H - 1
CN5	P - 7	Q48	H - 1
CN6	M - 2	Q49	J - 1
CN7	F - 1	Q50	I - 1
CN8	G - 1	Q51	H - 1
CN9	I - 1	Q52	I - 2
		Q53	F - 1
D1	B - 6	Q54	F - 2
D2	D - 3	Q55	Q56
D3	D - 1	G - 1	G - 1
D4	G - 2	Q57	K - 6
D5	I - 2	Q58	F - 1
D6	I - 7	Q59	F - 1
D7	I - 6	Q60	Q61
D8	G - 5	J - 6	J - 6
D9	I - 3	Q62	J - 5
D10	G - 6	Q63	J - 6
D11	F - 5	Q64	K - 5
D12	L - 6	Q65	J - 7
D13	D - 7	Q66	K - 5
D14	D - 4	Q67	J - 7
D15	E - 7	Q68	L - 5
D16	E - 6	Q69	M - 4
D17	E - 2	Q70	L - 5
D18	K - 4	Q71	M - 4
D19	K - 4	Q72	L - 6
D20	A - 7	Q73	H - 7
D21	G - 5	Q74	G - 7
D22	G - 7	Q75	H - 7
		Q76	G - 7
IC1	A - 1	RV1	N - 1
IC2	F - 3	RV2	N - 4
IC3	G - 4	RV3	N - 7
IC4	O - 6	RV4	P - 1
IC5	B - 5	RV5	P - 4
IC6	O - 2	RV7	P - 7
IC7	O - 4	RV6	P - 7
IC8	K - 2	RV7	K - 7
IC9	K - 3	RV8	K - 3
IC10	I - 4	RV9	K - 5
IC11	J - 6		
Q1	B - 3	S1	A - 6
Q2	A - 3	S2	A - 3
Q3	B - 3	S3	C - 3
Q4	B - 1	S4	C - 2
Q5	B - 1	S5	C - 1
Q6	B - 1	S6	A - 2
Q7	B - 1	S7	G - 2
Q8	B - 2	S8	F - 2
Q9	F - 4	S9	J - 2
Q10	F - 4	S10	H - 2
Q11	F - 4	S11	H - 5
Q12	F - 3	S12	H - 7
Q13	E - 4	S13	I - 6
Q14	E - 3	S14	K - 1
Q15	E - 3	S15	H - 3
Q16	E - 2	S16	G - 3
Q17	H - 4	S17	I - 3
Q18	G - 4	S18	I - 7
Q19	I - 4	S19	I - 5
Q20	I - 4	S20	F - 7
Q21	H - 5	S21	F - 6
Q22	F - 4	S22	F - 5
Q23	F - 4	S23	C - 7
Q24	G - 4	S24	C - 6
Q25	O - 6	S25	C - 5
Q26	O - 6	S26	L - 1
Q27	N - 5	S27	D - 7
Q28	O - 5	S28	D - 1
Q29	O - 6	S29	D - 6
Q30	O - 6	S30	D - 5
Q31	B - 5	S31	D - 3
Q32	B - 5	S32	D - 2
Q33	B - 4		
Q34	B - 5		
Q35	A - 4		
Q36	A - 5		
Q37	N - 2		
Q38	N - 2		
Q39	N - 3		
Q40	N - 3		
Q41	N - 3		
Q42	N - 5		
Q43	N - 4		

J



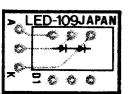
LED-98 BOARD

SW-371 BOARD

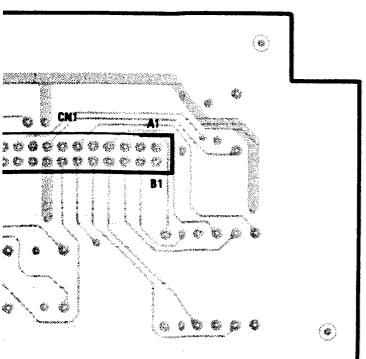


J-632-788-12 SOLDERING SIDE

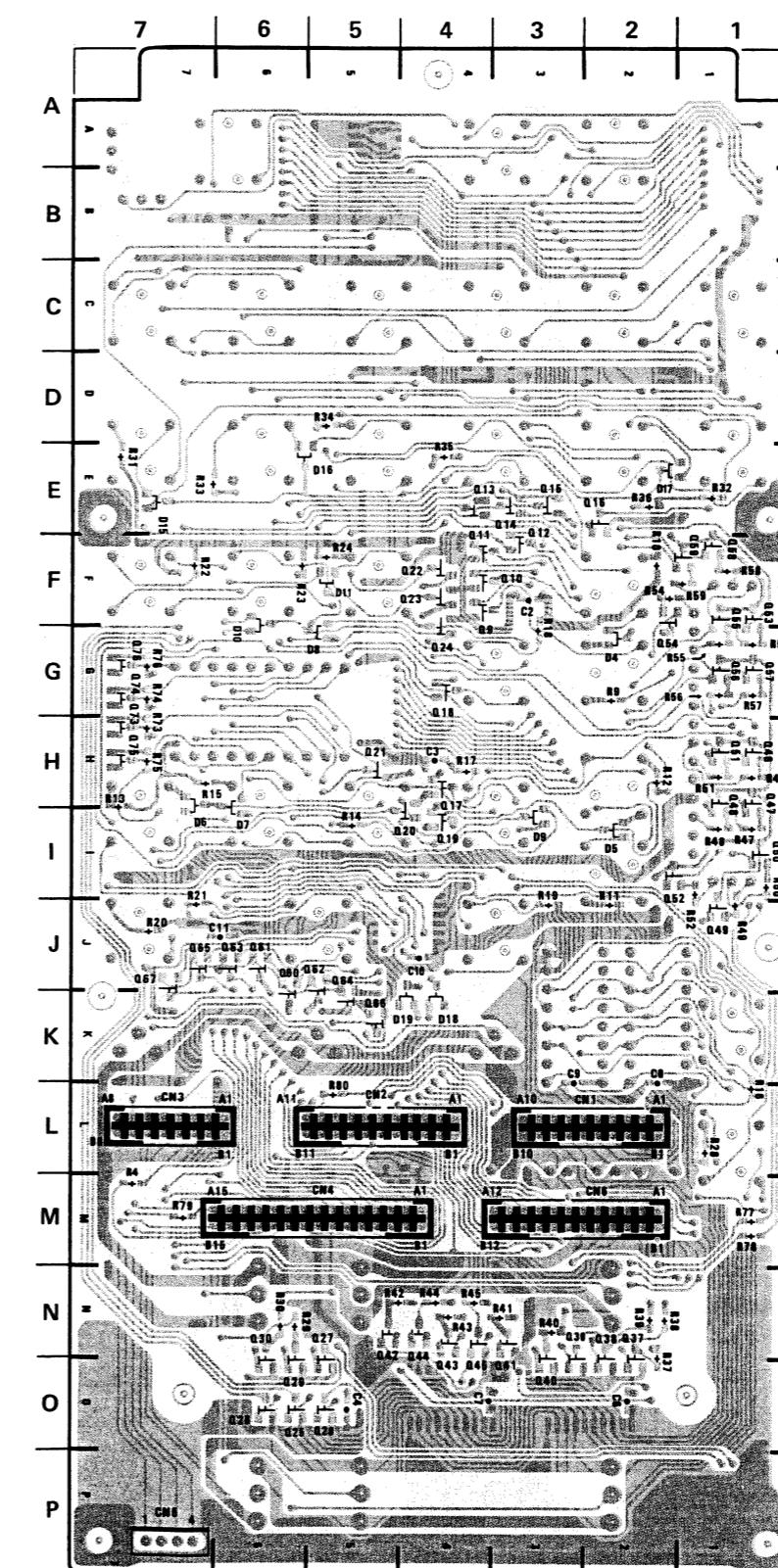
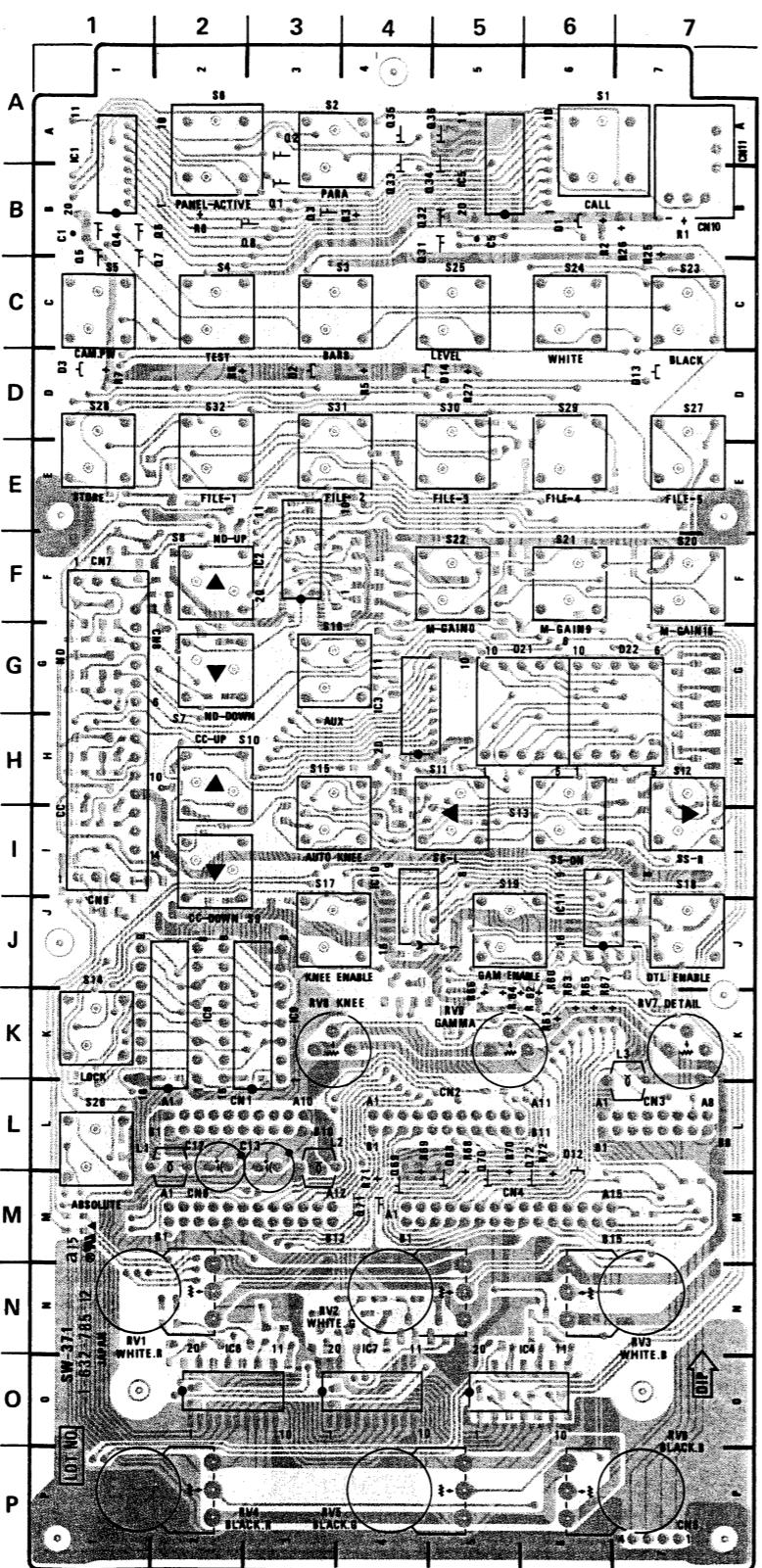
LED-109 BOARD



J-634-853-11 SOLDERING SIDE



J-632-788-12 SOLDERING SIDE



J-632-785-12 SOLDERING SIDE

SW-371 (1-632-785-12)

CN1	L - 2	Q47	H - 1
CN2	L - 5	Q48	H - 1
CN3	L - 7	Q49	J - 1
CN4	M - 5	Q50	I - 1
CN5	P - 7	Q51	H - 1
CN6	M - 2	Q52	I - 1
D1	B - 6	Q53	F - 1
D2	D - 3	Q54	G - 2
D3	D - 1	Q55	F - 1
D4	G - 2	Q56	G - 1
D5	I - 2	Q57	F - 1
D6	I - 7	Q58	F - 1
D7	I - 6	Q59	J - 5
D8	G - 5	Q60	J - 5
D9	I - 3	Q61	J - 5
D10	G - 6	Q62	J - 5
D11	F - 5	Q63	J - 5
D12	L - 6	Q64	J - 5
D13	D - 7	Q65	J - 7
D14	D - 5	Q66	K - 5
D15	E - 7	Q67	L - 5
D16	E - 5	Q68	L - 4
D17	E - 2	Q69	L - 5
D18	K - 4	Q70	M - 4
D19	K - 4	Q72	L - 6
D20	A - 7	Q73	H - 7
D21	G - 5	Q74	G - 7
D22	G - 7	Q75	H - 7
IC1	A - 1	Q76	G - 7
IC2	F - 3		
IC3	G - 4		
IC4	N - 6		
IC5	B - 5		
IC6	N - 2		
IC7	N - 4		
IC8	K - 2		
IC9	K - 3		
IC10	I - 4		
IC11	J - 6		
Q1	S1	A - 6	
Q2	S2	A - 3	
Q3	S3	C - 3	
Q4	S4	C - 2	
Q5	S5	C - 1	
Q6	S6	A - 2	
Q7	S7	H - 2	
Q8	S8	F - 2	
Q9	S9	J - 3	
Q10	S10	H - 2	
Q11	S11	H - 5	
Q12	S12	H - 7	
Q13	S13	A - 3	
Q14	S14	J - 1	
Q15	S15	H - 3	
Q16	S16	G - 3	
Q17	S17	I - 3	
Q18	S18	H - 4	
Q19	S19	I - 5	
Q20	S20	F - 7	
Q21	S21	F - 6	
Q22	S22	F - 5	
Q23	S23	C - 7	
Q24	S24	D - 6	
Q25	S25	D - 5	
Q26	S26	L - 1	
Q27	S27	D - 7	
Q28	S28	D - 1	
Q29	S29	D - 6	
Q30	S30	D - 5	
Q31	S31	D - 3	
Q32	S32	D - 2	

A-15 (b)

D

E

F

G

A-16 (b)

H

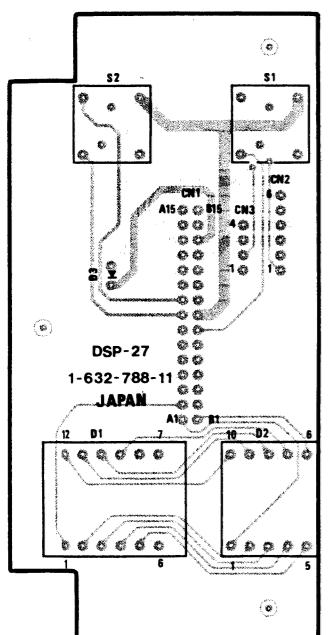
I

RCP-3720/3721 (W.W.)

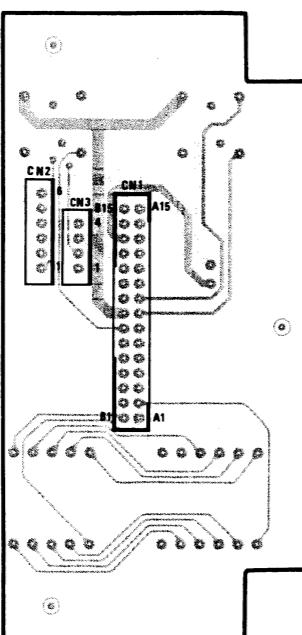
J

**FRAME (2/2)** Ser No. 11101-11700 RCP-3720  
10401-10700 RCP-3721

## DSP-27 BOARD (FOR RCP-3720)

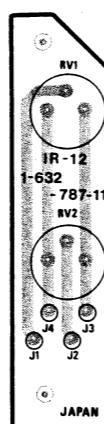


J-635-288-11 SORDBRING SIDE



1-632-788-11 SOLDERING SIDE

**IR-12 BOARD  
(FOR RCP-3720)**



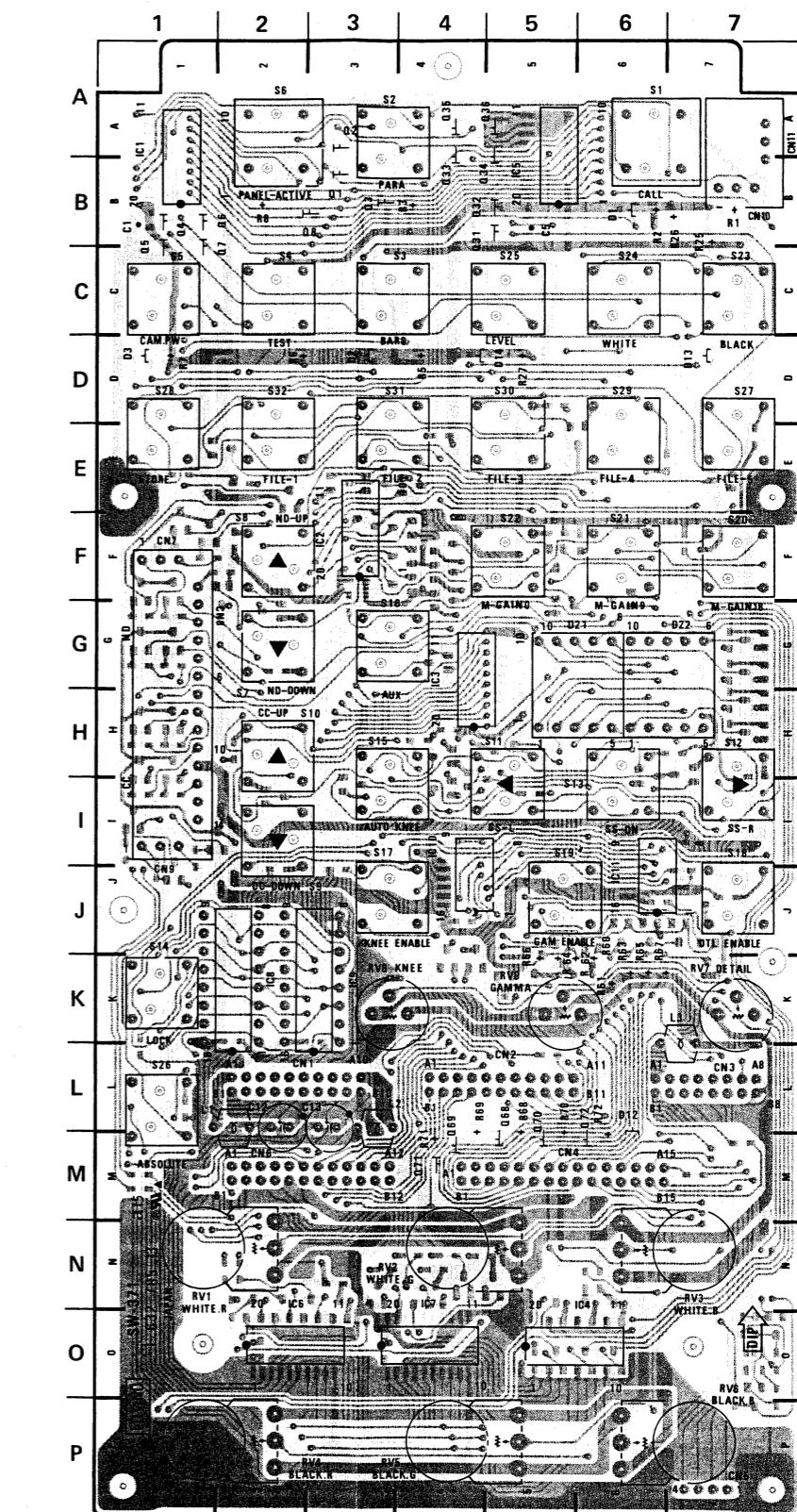
-635-787-11 SOLDERING SIDE

LED-98 BOAR



635-788-12 SOLDERING SIDE

SW-371 BOARD



2012 RELEASE UNDER E.O. 14176

-632-

B=BCP3720/3721-FRAME#2/MOUNT

A-14 (c)

B

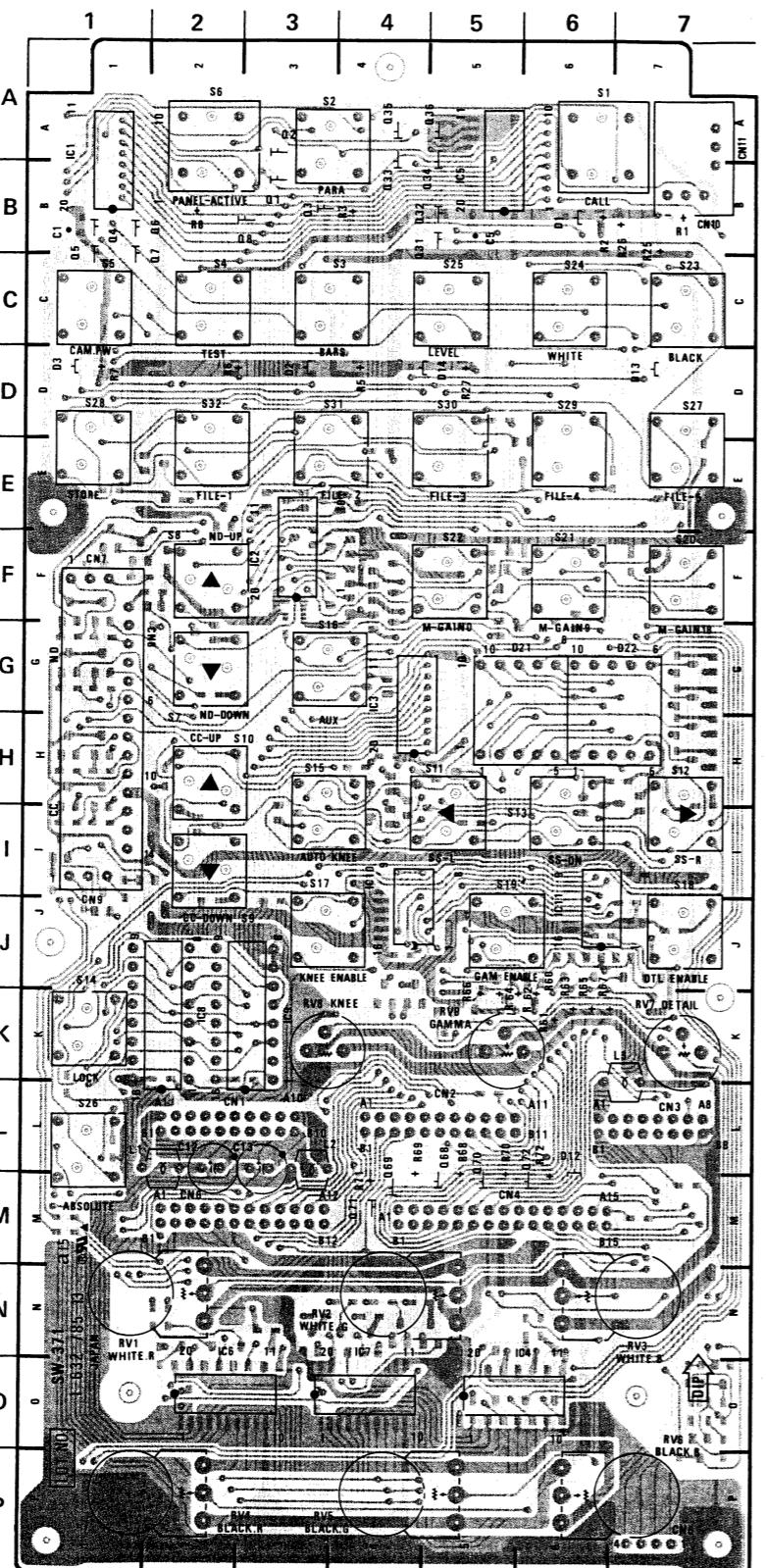
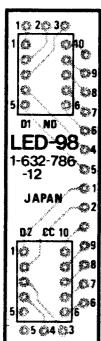
1

F

6

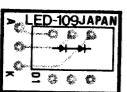
LED-98 BOARD

SW-371 BOARD

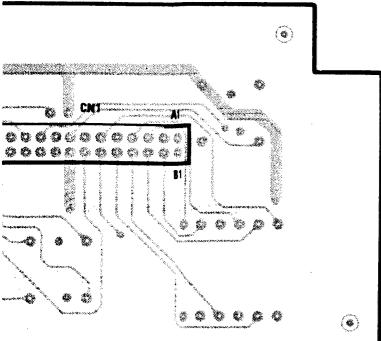


J-635-28E-13 SOLDERING SIDE

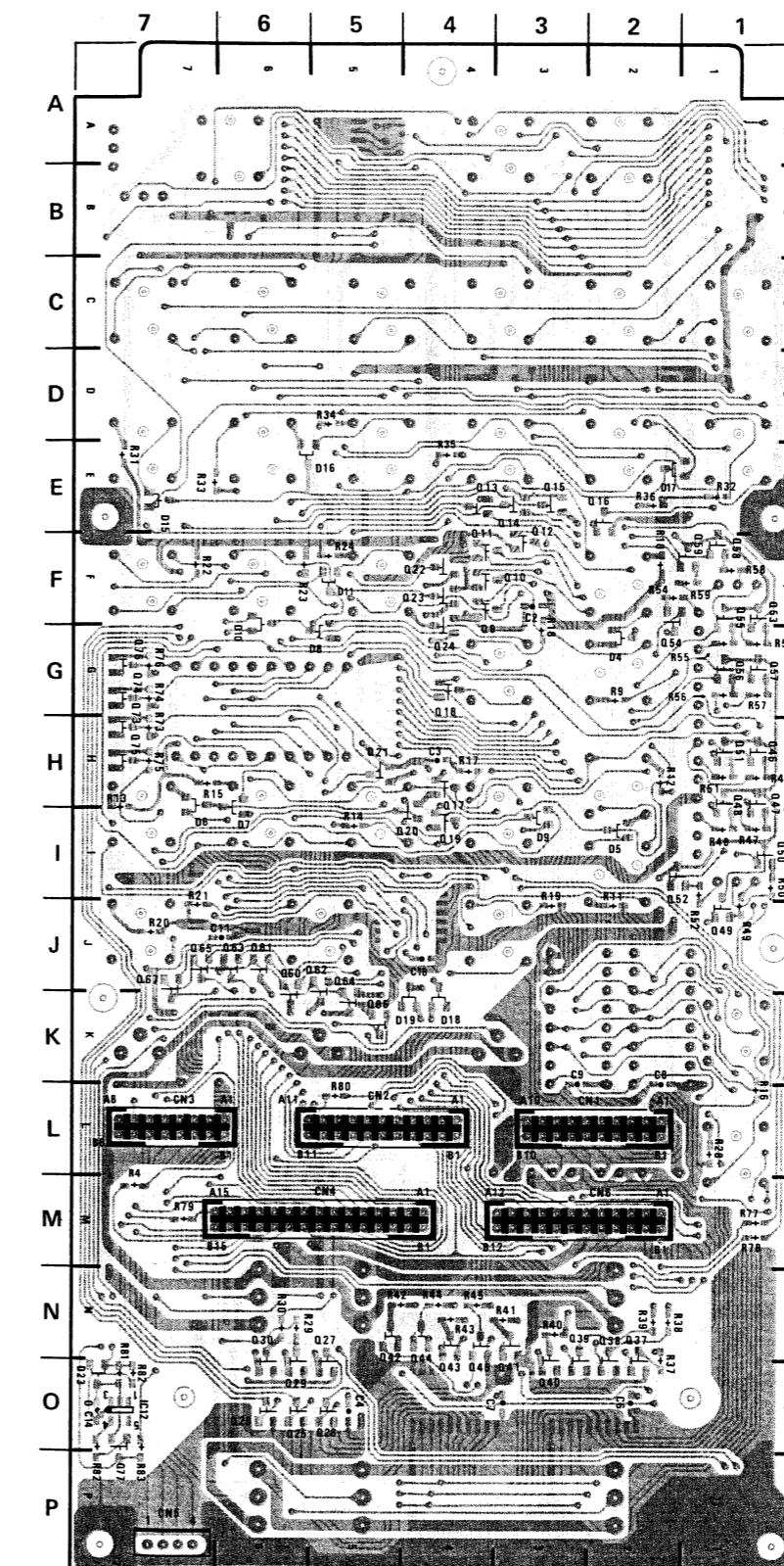
LED-109 BOARD



J-635-28E-13 SOLDERING SIDE



J-634-053-11 SOLDERING SIDE



1-632-785-13 SOLDERING SIDE

A-15(c)

F

G

H

I

J

D

E

A-16(c)

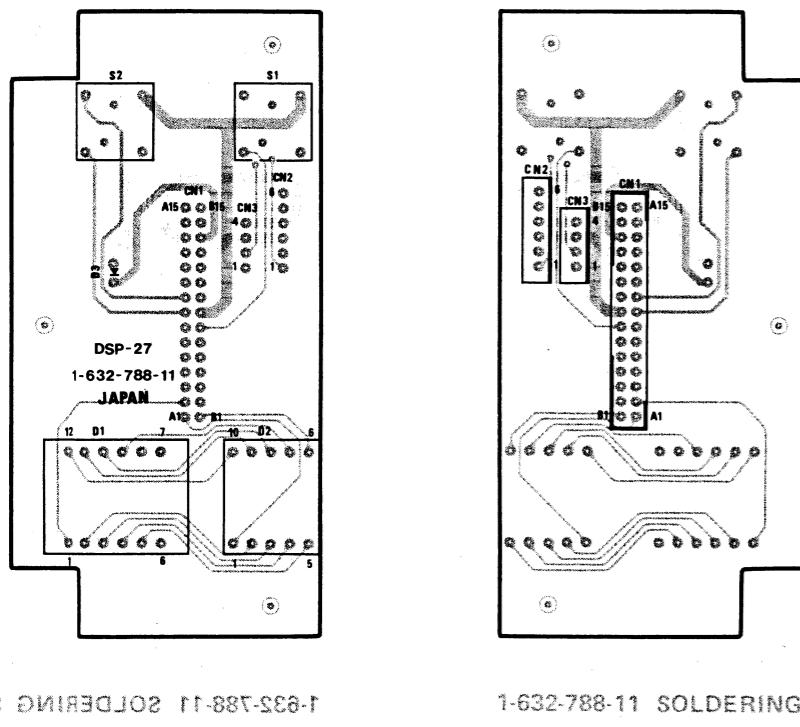
RCP-3720/3721 (W.W.)

SW-371 (1-632-785-13)

CN1	L - 2	Q45	O - 4
CN2	L - 5	Q46	H - 1
CN3	L - 7	Q47	H - 1
CN4	M - 5	Q48	H - 1
CN5	P - 7	Q49	J - 1
CN6	M - 2	Q50	I - 1
D1	B - 6	Q51	H - 1
D2	D - 3	Q52	I - 1
D3	D - 1	Q53	F - 1
D4	G - 2	Q54	F - 1
D5	I - 2	Q55	G - 1
D6	I - 7	Q56	G - 1
D7	I - 6	Q57	F - 1
D8	G - 5	Q58	F - 1
D9	I - 3	Q59	J - 5
D10	G - 6	Q60	J - 5
D11	F - 5	Q61	J - 5
D12	L - 6	Q62	J - 5
D13	D - 7	Q63	J - 5
D14	D - 5	Q64	J - 5
D15	E - 7	Q65	K - 5
D16	E - 5	Q66	K - 5
D17	E - 2	Q67	L - 5
D18	K - 4	Q68	L - 4
D19	K - 4	Q69	L - 5
D21	G - 5	Q70	M - 4
D22	G - 7	Q71	M - 4
D23	O - 7	Q72	L - 6
D25	O - 7	Q73	H - 7
		Q74	G - 7
		Q75	H - 7
IC1	A - 1	Q76	G - 7
IC2	F - 3	Q77	P - 7
IC3	G - 4		
IC4	N - 6	RV1	N - 1
IC5	B - 5	RV2	N - 3
IC6	N - 2	RV3	N - 7
IC7	N - 4	RV4	P - 3
IC8	K - 2	RV5	P - 4
IC9	K - 3	RV6	O - 7
IC10	I - 4	RV7	K - 7
IC11	J - 6	RV8	K - 3
IC12	O - 7	RV9	K - 5
Q1	B - 3	S1	A - 6
Q2	A - 3	S2	A - 3
Q3	B - 3	S3	C - 3
Q4	B - 1	S4	C - 2
Q5	C - 1	S5	C - 1
Q6	B - 2	S6	A - 2
Q7	C - 2	S7	H - 2
Q8	B - 2	S8	F - 2
Q9	G - 4	S9	J - 3
Q10	F - 3	S10	H - 2
Q11	G - 4	S11	H - 5
Q12	E - 3	S12	H - 7
Q13	E - 4	S13	I - 6
Q14	E - 3	S14	J - 1
Q15	E - 3	S15	H - 3
Q16	E - 2	S16	G - 3
Q17	H - 4	S17	I - 3
Q18	G - 4	S18	I - 5
Q19	I - 4	S19	I - 5
Q20	I - 4	S20	F - 7
Q21	H - 5	S21	F - 6
Q22	G - 4	S22	F - 5
Q23	G - 4	S23	C - 7
Q24	G - 4	S24	D - 6
Q25	O - 6	S25	D - 5
Q26	O - 6	S26	L - 1
Q27	N - 5	S27	D - 7
Q28	O - 5	S28	D - 1
Q29	O - 6	S29	D - 6
Q30	N - 6	S30	D - 5
Q31	B - 4	S31	D - 3
Q32	B - 4	S32	D - 2
Q33	B - 4		
Q34	B - 4		
Q35	A - 4		
Q36	A - 4		
Q37	N - 2		
Q38	N - 2		
Q39	N - 3		
Q40	O - 3		
Q41	O - 3		
Q42	N - 5		
Q43	O - 4		
Q44	N - 4		

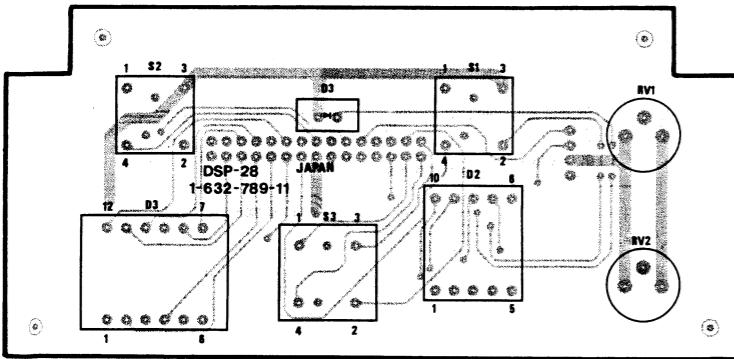
FRAME (2/2) Ser No.11701- RCP-3720  
10701- RCP-3721

DSP-27 BOARD (FOR RCP-3720)



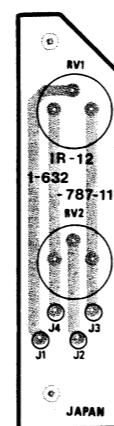
J-835-788-11 SOLDERING SIDE

DSP-28 BOARD (FOR RCP-3721)



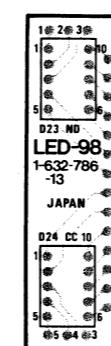
J-835-789-11 SOLDERING SIDE

IR-12 BOARD  
(FOR RCP-3720)



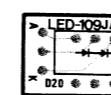
J-835-787-11 SOLDERING SIDE

LED-98 BOARD



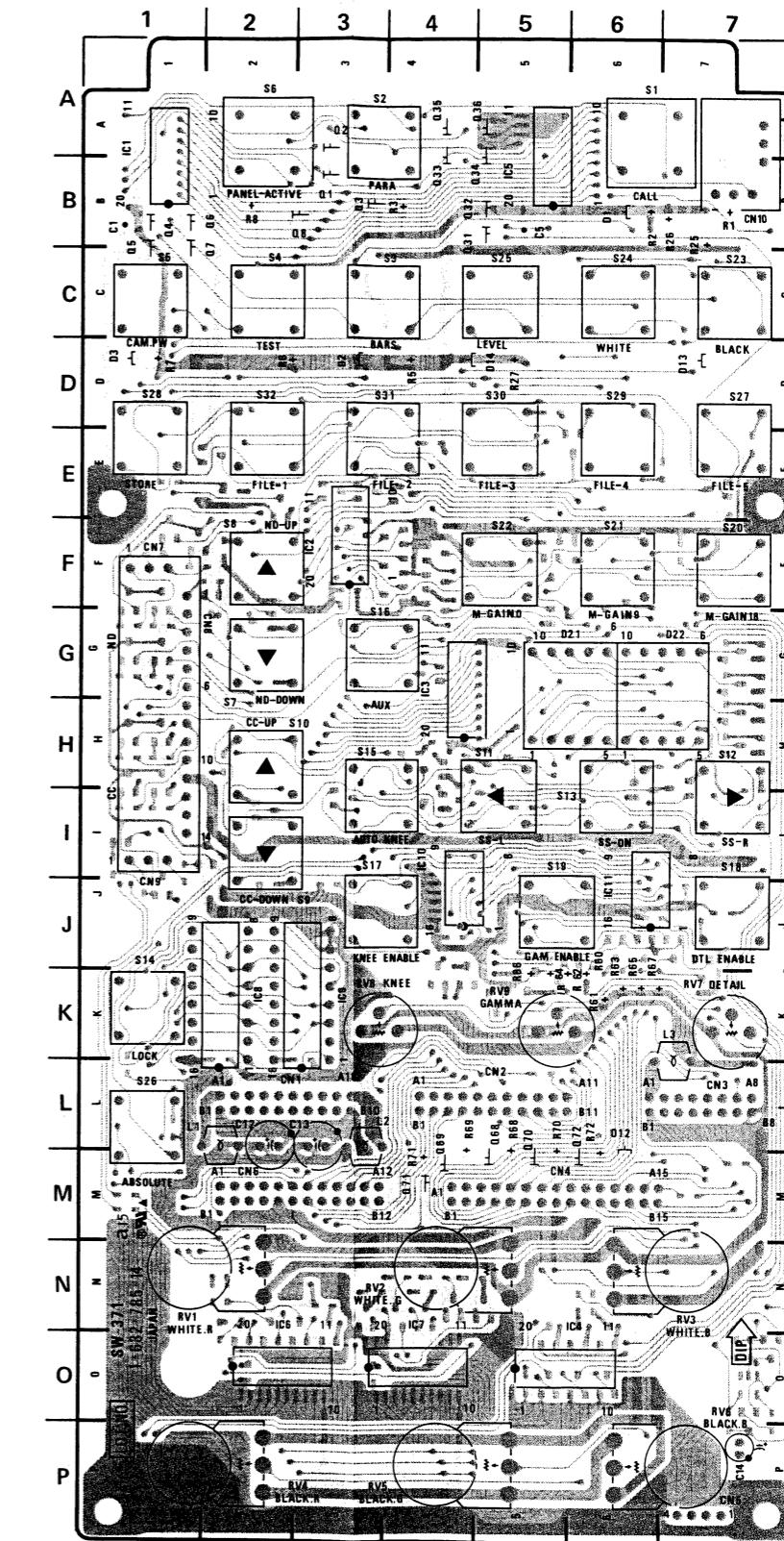
J-835-786-13 SOLDERING SIDE

LED-109 BOARD



J-834-933-13 SOLDERING SIDE

SW-371 BOARD

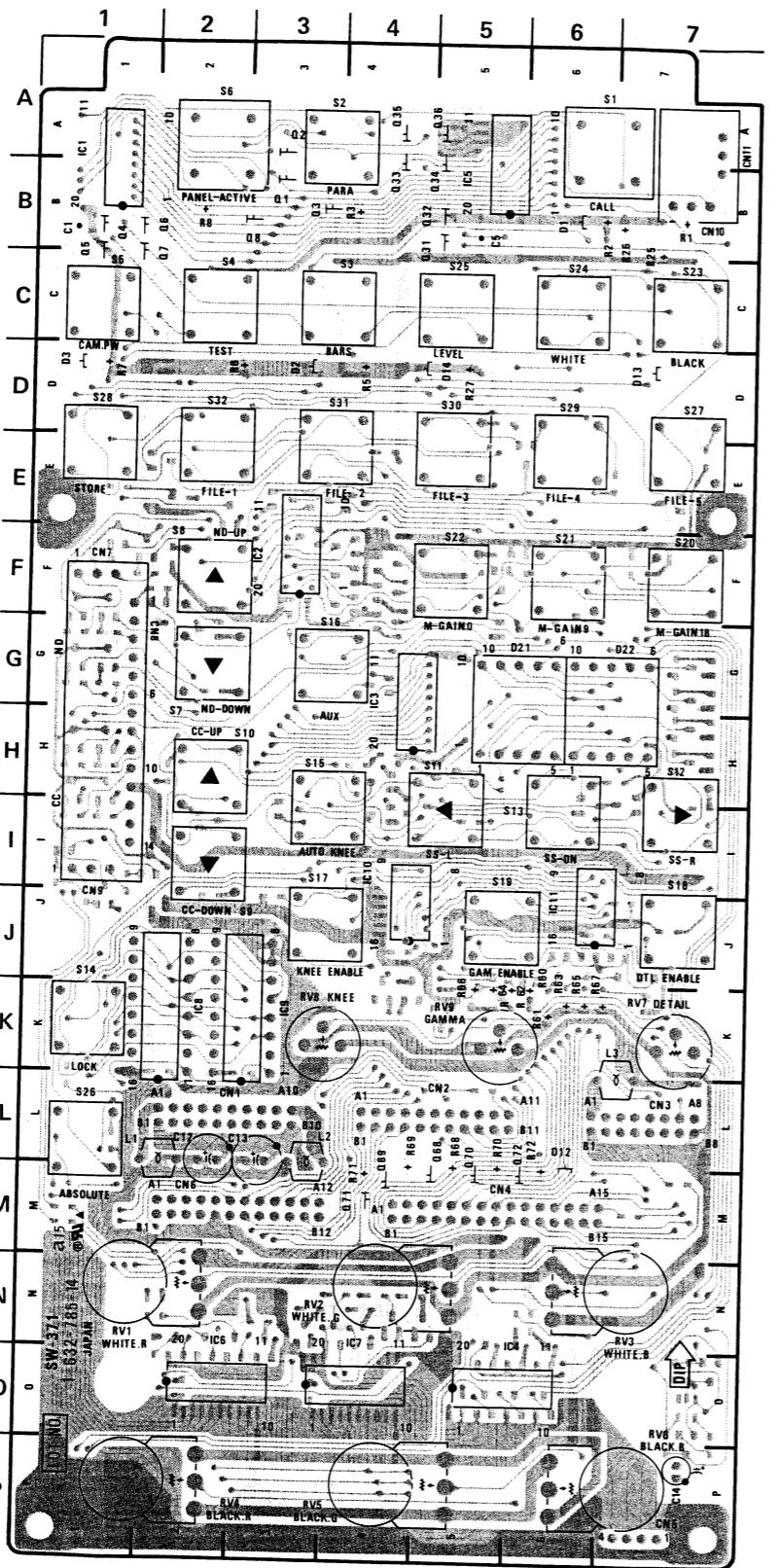


J-835-782-14 SOLDERING SIDE

1-632-

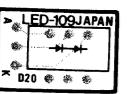
LED-98 BOARD

SW-371 BOARD

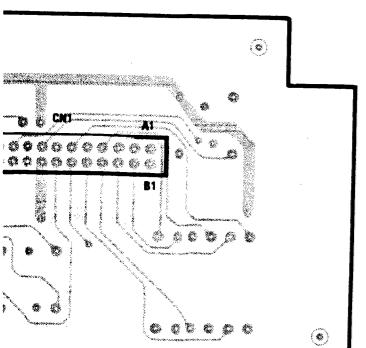


1-632-786-13 SOLDERING SIDE

LED-109 BOARD



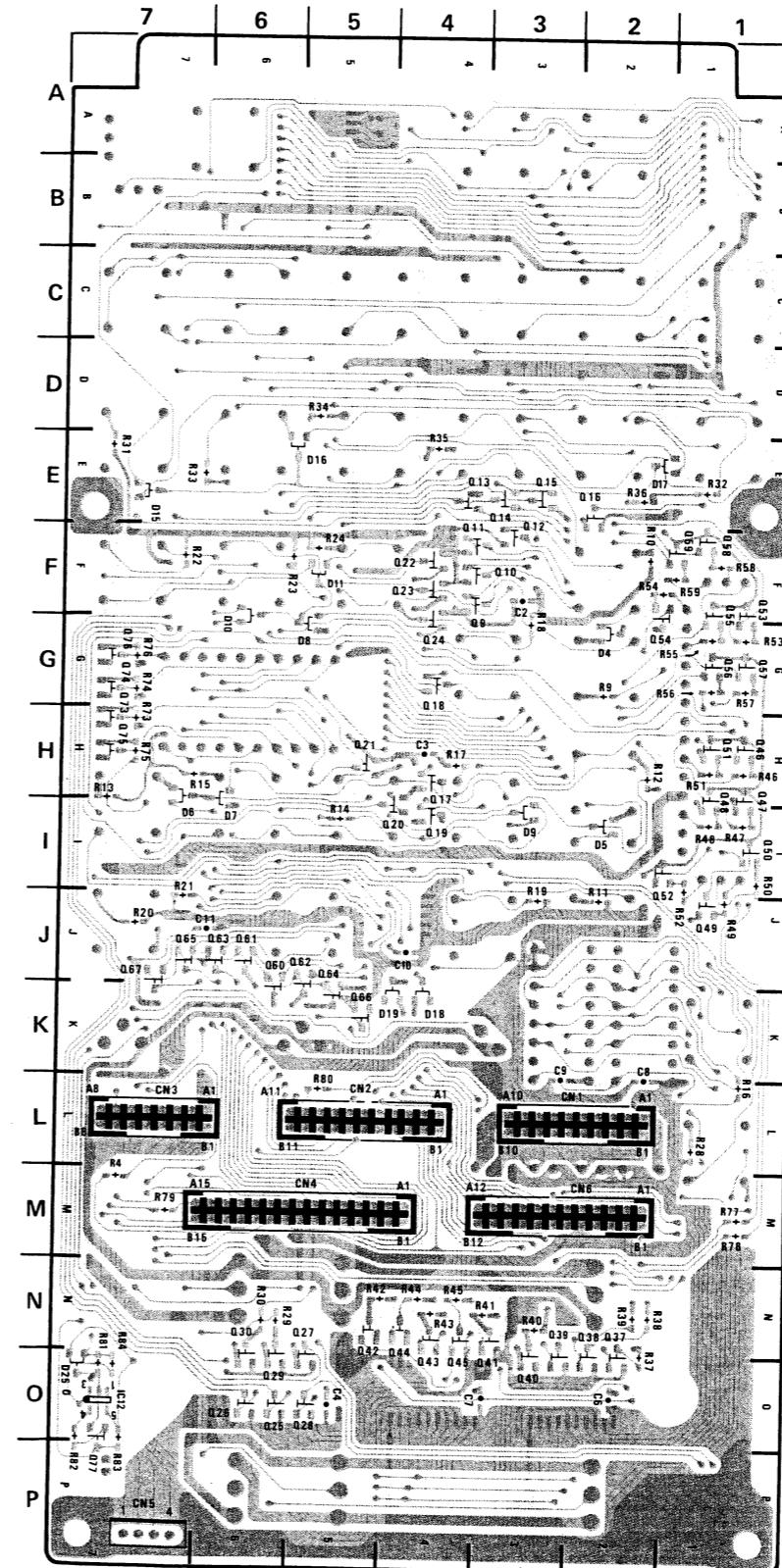
1-634-833-13 SOLDERING SIDE



1-634-833-13 SOLDERING SIDE

A-15(d)

G



1-632-785-14 SOLDERING SIDE

A-16(d)

H

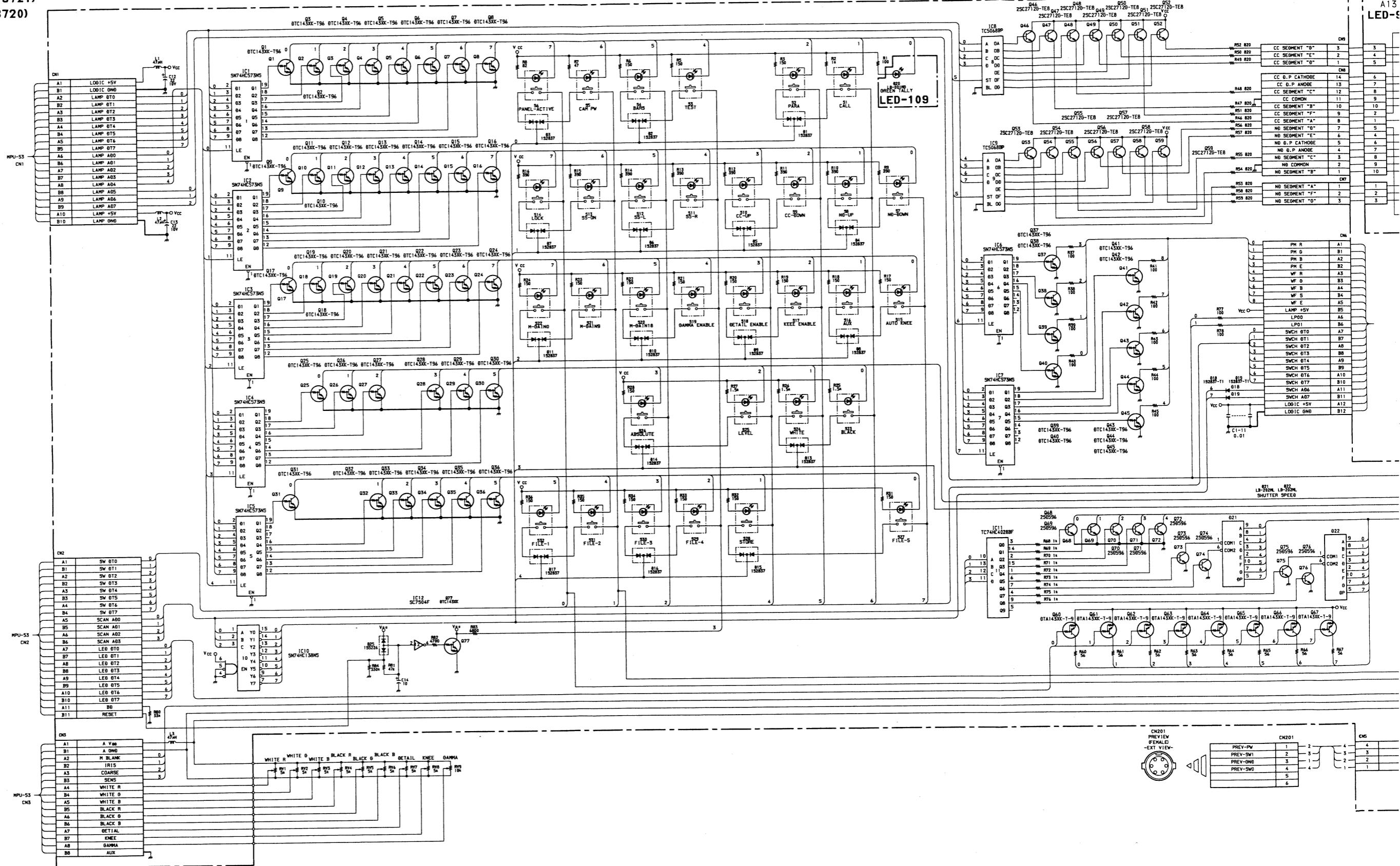
SW-371 (1-632-785-14)			
CN1	L - 2	Q40	O - 3
CN2	L - 5	Q41	O - 3
CN3	L - 7	Q42	N - 5
CN4	M - 5	Q43	O - 4
CN5	P - 7	Q44	N - 4
CN6	M - 2	Q45	O - 4
CN14	K - 1	Q46	H - 1
CN15	N - 1	Q47	H - 1
CN16	M - 1	Q48	H - 1
D1	B - 6	Q49	J - 1
D2	D - 3	Q50	I - 1
D3	D - 1	Q51	H - 1
D4	G - 2	Q52	F - 1
D5	I - 2	Q53	F - 1
D6	I - 7	Q54	F - 1
D7	I - 6	Q55	G - 1
D8	G - 5	Q56	G - 1
D9	I - 3	Q57	F - 1
D10	G - 6	Q58	F - 1
D11	F - 5	Q59	F - 1
D12	L - 6	Q60	J - 5
D13	D - 7	Q61	J - 5
D14	D - 5	Q62	J - 5
D15	E - 7	Q63	J - 5
D16	E - 5	Q64	J - 5
D17	E - 2	Q65	J - 7
D18	K - 4	Q66	K - 5
D19	K - 4	Q67	J - 7
D20	J - 1	Q68	L - 5
D21	G - 5	Q69	L - 4
D22	G - 7	Q70	L - 5
D23	L - 1	Q71	M - 4
D24	M - 1	Q72	L - 6
D25	O - 7	Q73	H - 7
IC1	A - 1	Q74	G - 7
IC2	F - 3	Q75	H - 7
IC3	G - 4	Q76	G - 7
IC4	N - 6	Q77	P - 7
IC5	B - 5	RV1	N - 1
IC6	N - 2	RV2	N - 3
IC7	N - 4	RV3	N - 7
IC8	K - 2	RV4	P - 3
IC9	K - 3	RV5	P - 4
IC10	I - 4	RV6	O - 7
IC11	J - 6	RV7	K - 7
IC12	O - 7	RV8	K - 3
Q1	B - 3	S1	A - 6
Q2	A - 3	S2	A - 3
Q3	B - 3	S3	C - 3
Q4	B - 1	S4	C - 2
Q5	C - 1	S5	C - 1
Q6	B - 2	S6	A - 2
Q7	C - 2	S7	H - 2
Q8	B - 2	S8	F - 2
Q9	G - 4	S9	J - 3
Q10	F - 3	S10	H - 2
Q11	G - 4	S11	H - 5
Q12	E - 3	S12	H - 7
Q13	E - 4	S13	I - 6
Q14	E - 3	S14	J - 1
Q15	E - 3	S15	H - 3
Q16	E - 2	S16	G - 3
Q17	H - 4	S17	I - 3
Q18	G - 4	S18	I - 7
Q19	I - 4	S19	I - 5
Q20	I - 4	S20	F - 7
Q21	H - 5	S21	F - 6
Q22	G - 4	S22	F - 5
Q23	G - 4	S23	C - 7
Q24	G - 4	S24	D - 6
Q25	O - 6	S25	D - 5
Q26	O - 6	S26	L - 1
Q27	N - 5	S27	D - 7
Q28	O - 5	S28	D - 1
Q29	O - 6	S29	D - 6
Q30	N - 6	S30	D - 5
Q31	B - 4	S31	D - 3
Q32	B - 4	S32	D - 2
Q33	B - 4		
Q34	B - 4		
Q35	A - 4		
Q36	A - 4		
Q37	N - 2		
Q38	N - 2		
Q39	N - 3		

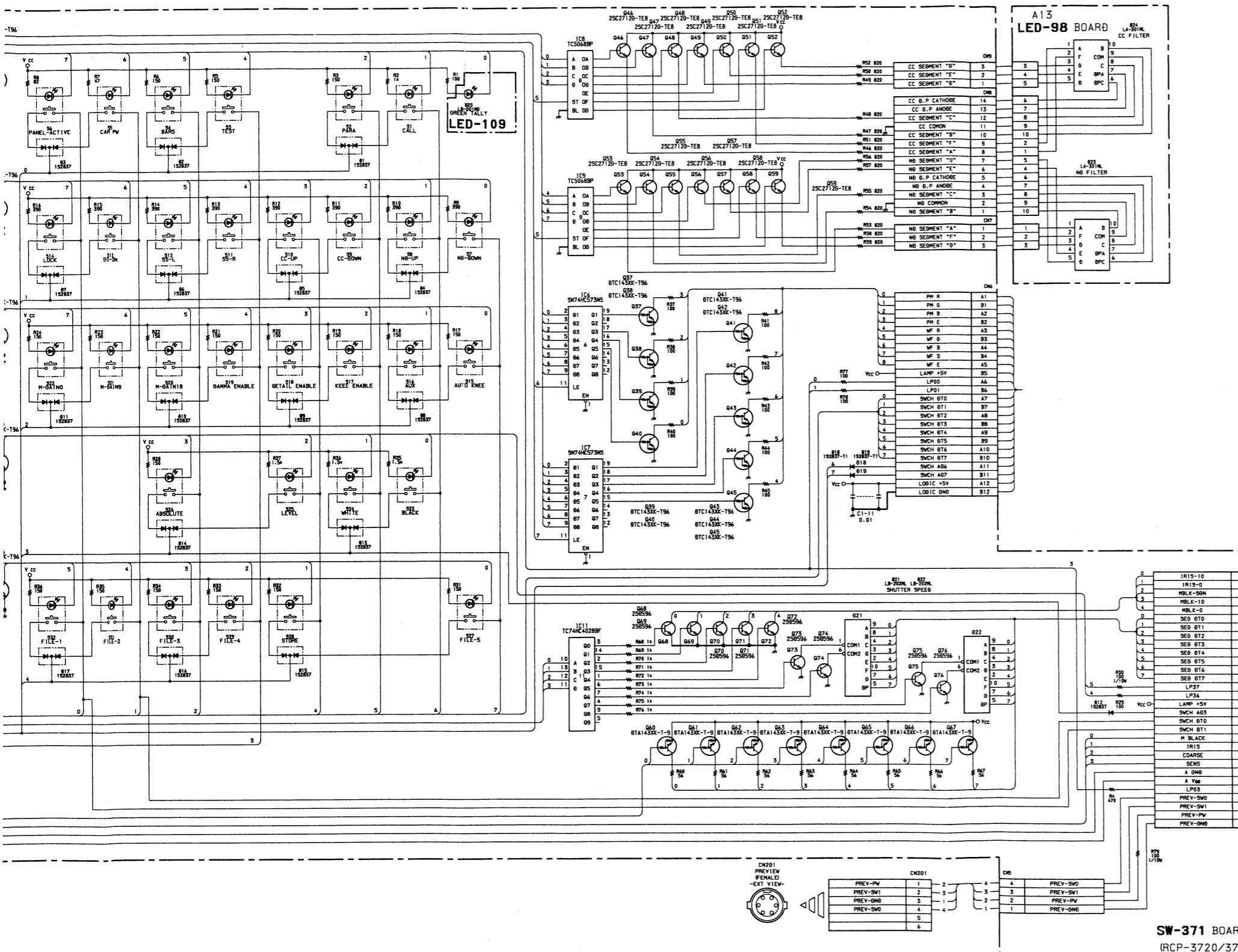
RCP-3720/3721 (W.W)

J

## FRAME WIRING (2/2)

DSP-27 BOARD (FOR RCP-3720)  
DSP-28 BOARD (FOR RCP-3721)  
IR-12 BOARD (FOR RCP-3720)  
LED-98 BOARD  
SW-371 BOARD





A-18

D

8

A-19

B-¥RCP3720-FRAME/M#2

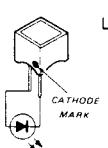
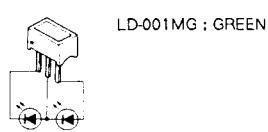
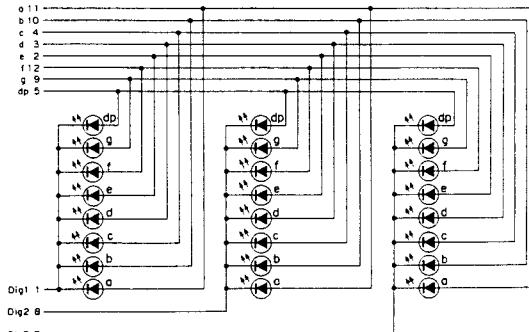
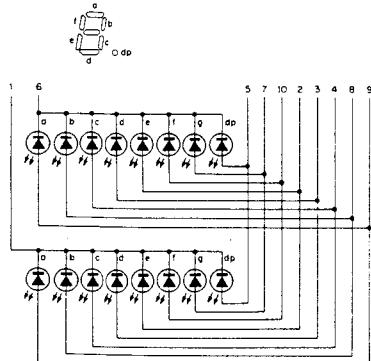
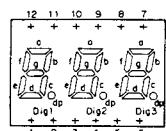
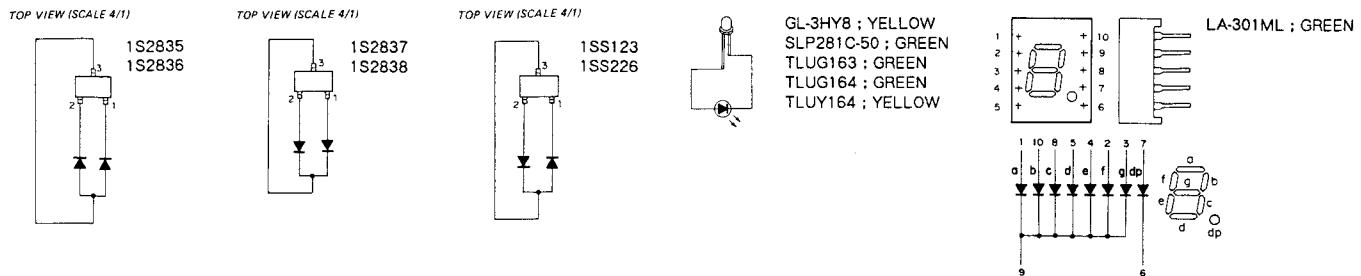
## SECTION B

### SEMICONDUCTOR PIN ASSIGNMENTS

The circuit diagram of IC is obtained from the IC data book published by the manufacturer.

TYPE	PAGE	TYPE	PAGE
1S2835.....	B-2	TC5068BP .....	B-6
1S2836.....	B-2	TC74HC4028F .....	B-6
1S2837.....	B-2	TL7700CPS.....	B-6
1S2838.....	B-2	TLP112.....	B-2
1SS123.....	B-2	TLUG163.....	B-2
1SS226.....	B-2	TLUG164.....	B-2
2SA1162 .....	B-2	TLUY164.....	B-2
2SC2712G .....	B-2	TMP82C79M-2 .....	B-8
2SD596.....	B-2	TMS27C256-25 .....	B-9
CXD1095Q.....	B-3	uPD7004C .....	B-9
CXK5864BM-10L .....	B-3		
DTA143XK .....	B-2		
DTC143XK.....	B-2		
GL-3HY8.....	B-2		
HD64180ZF.....	B-4		
LA-301ML .....	B-2		
LB-202ML .....	B-2		
LB-203ML .....	B-2		
LD-001MG .....	B-2		
LD-101MG .....	B-2		
MC14053BF .....	B-4		
MSM80C49GS .....	B-5		
RD ? ? MB ? .....	B-2		
SLP281C-50 .....	B-2		
SN74HC04NS.....	B-6		
SN74HC138NS.....	B-6		
SN74HC163NS.....	B-6		
SN74HC245NS.....	B-6		
SN74HC32NS .....	B-6		
SN74HC374NS.....	B-6		
SN74HC573NS.....	B-6		
SN74HC86NS .....	B-6		

## DIODE, TRANSISTOR

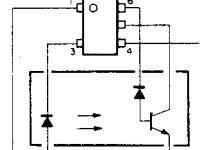


**TOP VIEW (SCALE 4/1)**

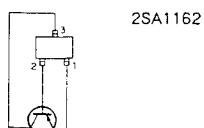
**RD ? ? MB ?**

**TOP VIEW (SCALE 4/1)**

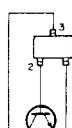
**TLP112**



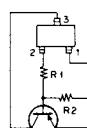
**TOP VIEW (SCALE 4/1)**



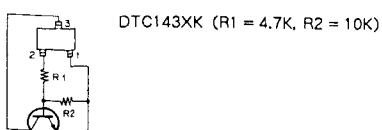
**TOP VIEW (SCALE 4/1)**



**TOP VIEW (SCALE 4/1)**

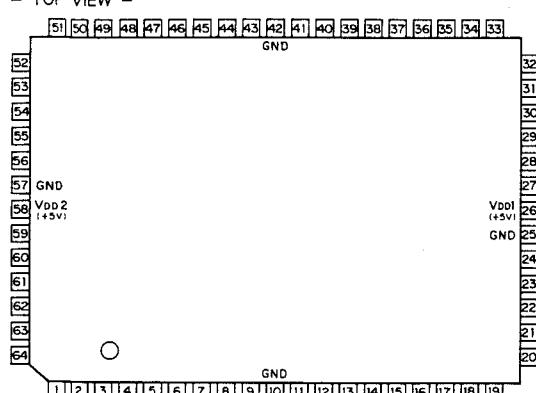


**TOP VIEW (SCALE 4/1)**



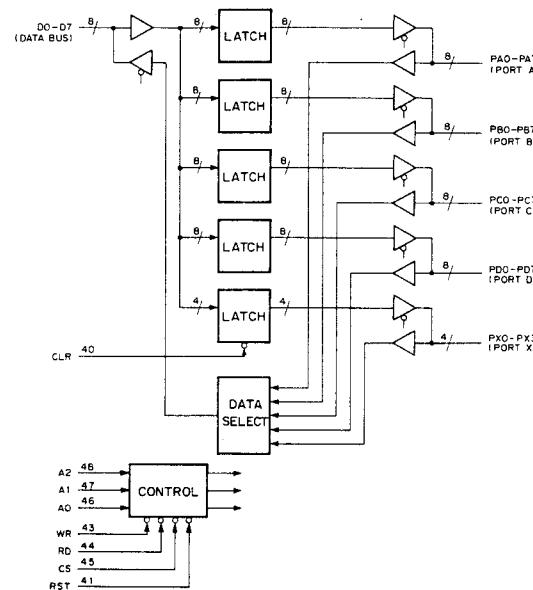
## CXD1095Q (SONY) FLAT PACKAGE

**C-MOS I/O PORT EXPANDER**  
**- TOP VIEW -**



PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1			NC	17	O	O	PC6	33			NC
2			NC	18	O	O	PC7	34			NC
3	O	O	PB1	19			NC	35	O	O	DS
4	O	O	PB2	20	O	O	PDO	36	O	O	D4
5	O	O	PB3	21	O	O	PD1	37	O	O	D5
6	O	O	PB4	22	O	O	PD2	38	O	O	D6
7	O	O	PB5	23	O	O	PD3	39	O	O	D7
8	O	O	PB6	24	O	O	PD4	40	O	O	CLR
9	O	O	PB7	25			GND	41	O	O	RST
10			GND	26	O	O	V <sub>DD(+5V)</sub>	42			GND
11	O	O	PC0	27	O	O	PD5	43	O	O	WR
12	O	O	PC1	28	O	O	PD6	44	O	O	RD
13	O	O	PC2	29	O	O	PD7	45	O	O	CS
14	O	O	PC3	30	O	O	DO	46	O	O	A0
15	O	O	PC4	31	O	O	D1	47	O	O	A1
16	O	O	PC5	32	O	O	D2	48	O	O	A2

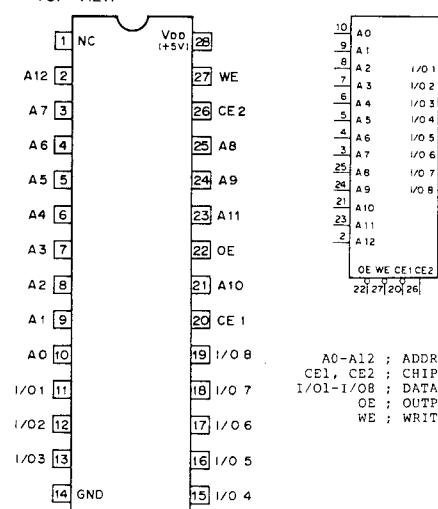
		CS	RD	WR	A2	A1	AO	MODE
PA0	54	O	O	1	O	O	O	PORT A → DATA BUS
PA1	55	O	O	1	O	O	1	PORT B → DATA BUS
PA2	56	O	O	1	O	1	O	PORT C → DATA BUS
PA3	59	O	O	1	O	1	O	PORT D → DATA BUS
PA4	60	O	O	1	O	1	1	PORT E → DATA BUS
PA5	61	O	O	1	1	O	0	PORT X ← DATA BUS
DO	62	O	O	1	1	O	1	—
D1	63	O	O	1	1	1	O	—
D2	64	O	O	1	1	1	1	—
D3	65	PB0	3	O	1	0	O	DATA BUS → PORT A
D4	66	PB1	4	O	1	0	O	DATA BUS → PORT B
D5	67	PB2	5	O	1	0	O	DATA BUS → PORT C
D6	68	PB3	6	O	1	0	O	DATA BUS → PORT D
D7	69	PB4	7	O	1	0	1	—
PX0	70	PB5	8	O	1	0	1	PORT X
PX1	71	PB6	9	O	1	0	1	—
PX2	72	PBT	9	O	1	0	1	—
PX3	73	PC0	11	O	1	0	1	DATA BUS → CTL REG. 1
		PC1	12	O	1	0	1	DATA BUS → CTL REG. 2
AO	74	PC2	13	1	X	X	X	DATA BUS ; HI-Z
A1	75	PC3	14					
A2	76	PC4	15	O ; LOW LEVEL				
		PC5	16	1 ; HIGH LEVEL				
CS	77	PC6	17	X ; DON'T CARE				
RD	78	PC7	18	Hi-Z ; HIGH IMPEDANCE				
WR	79							
RST	80	PDO	20					
CLR	81	PDI	21	DO-D7 ; DATA BUS INPUTS/OUTPUTS				
		PD2	22	CS ; CHIP SELECT INPUT				
		PD3	23	RD ; READ STROBE INPUT				
		PD4	24	WR ; WRITE STROBE INPUT				
		PDS	27	AO-A2 ; ADDRESS INPUT				
		PD6	28	RST ; RESET INPUT				
		PDT	29	CLR ; CLEAR INPUT				
				PA0-PA7 ; PORT A INPUTS/OUTPUTS				
				PB0-PB7 ; PORT B INPUTS/OUTPUTS				
				PC0-PC7 ; PORT C INPUTS/OUTPUTS				
				PDO-PDT ; PORT D INPUTS/OUTPUTS				
				PX0-PX3 ; PORT X INPUTS/OUTPUTS				



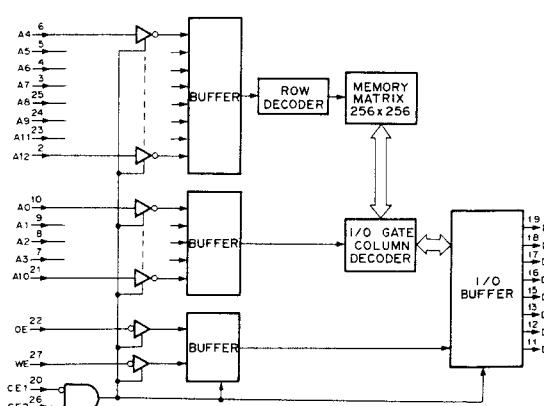
CXK5864BM-10L (SONY) (ACCESS TIME = 100nS) FLAT PACKAGE

C-MOS 64K(8192x8)-BIT STATIC RAM

- TOP VIEW -



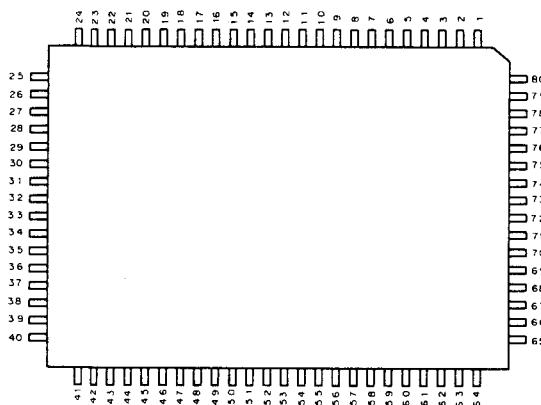
CE1	CE2	OE	WE	MODE	I/O TERMINAL
1	X	X	X	NOT SELECT	HIGH IMPEDANCE
X	0	X	X	NOT SELECT	HIGH IMPEDANCE
0	1	1	1	OUTPUT DISABLE	HIGH IMPEDANCE
0	1	0	1	READ	OUTPUT DATA
0	1	X	0	WRITE	INPUT DATA



## HD64180ZF (HITACHI) FLAT PACKAGE

C-MOS 8-BIT MICROPROCESSOR

- TOP VIEW -



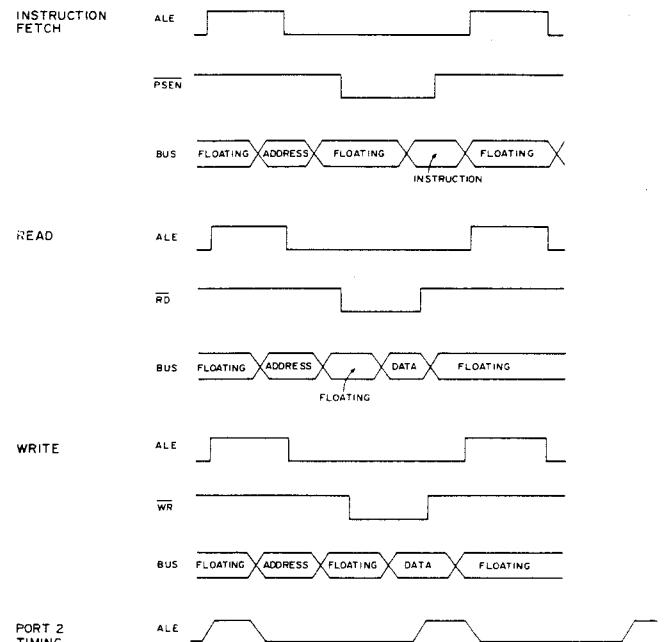
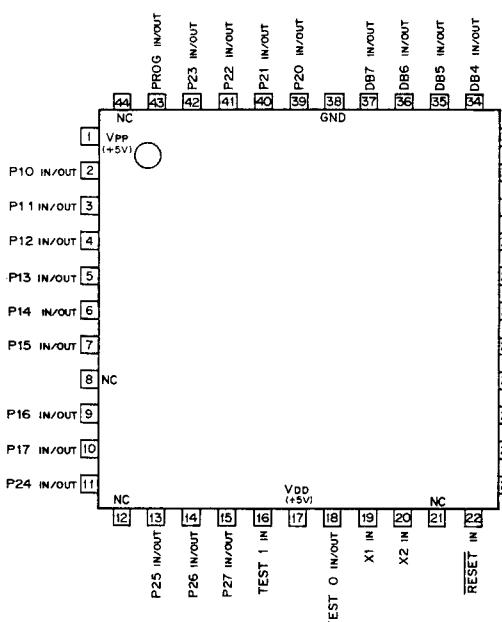
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I	NM1	21	O	A11	41	I/O	D6	61	O	HALT
2	-	NC	22	-	NC	42	-	NC	62	-	NC
3	-	NC	23	-	NC	43	-	NC	63	-	NC
4	I	INT0	24	O	A12	44	I/O	D7	64	O	REF
5	I	INT1	25	O	A13	45	I/O	RTS0	65	O	IOE
6	I	INT2	26	O	A14	46	I	CTS0	66	O	ME
7	O	ST	27	O	A15	47	I	DCD0	67	O	E
8	O	A0	28	O	A16	48	I	TXA0	68	O	LIR
9	O	A1	29	O	A17	49	I	RXA0	69	O	WR
10	O	A2	30	-	NC	50	I/O	CKAO/DREQ0	70	O	RD
11	O	A3	31	O	A18/TOUT	51	-	NC	71	O	+
12	Vss		32	VCC		52	O	TXA1	72	Vss	
13	O	A4	33	O	A19	53	TEST	73	Vss		
14	-	NC	34	Vss		54	I	RXA1	74	I	XTAL
15	O	A5	35	I/O	D0	55	I/O	CKA1/TEND0	75	-	NC
16	O	A6	36	I/O	D1	56	O	TXS	76	I	EXTAL
17	O	A7	37	I/O	D2	57	I	RXS/CTS1	77	I	WAIT
18	O	A8	38	I/O	D3	58	I/O	CKS	78	O	BUSACK
19	O	A9	39	I/O	D4	59	I	DREQ1	79	I	BUSREQ
20	O	A10	40	I/O	D5	60	O	TEND1	80	I	RESET

35 D0 A0 8  
 36 D1 A1 9  
 37 D2 A2 10  
 38 D3 A3 11  
 39 D4 A4 12  
 40 D5 A5 13  
 41 D6 A6 14  
 44 D7 A7 15  
 1 NM1 A8 16  
 49 A9 17  
 50 INT0 A10 18  
 51 INT1 A11 19  
 6 INT2 A12 20  
 70 RESET A13 21  
 71 A14 22  
 72 A15 23  
 73 A16 24  
 74 A17 25  
 75 A18 26  
 76 A19 27  
 77 A20 28  
 78 A21 29  
 79 A22 30  
 80 A23 31  
 81 A24 32  
 82 A25 33  
 83 A26 34  
 84 A27 35  
 85 A28 36  
 86 A29 37  
 87 A2A 38  
 88 A2B 39  
 89 A2C 40  
 90 A2D 41  
 91 A2E 42  
 92 A2F 43  
 93 A2G 44  
 94 A2H 45  
 95 A2I 46  
 96 A2J 47  
 97 A2K 48  
 98 A2L 49  
 99 A2M 50  
 100 A2N 51  
 101 A2O 52  
 102 A2P 53  
 103 A2Q 54  
 104 A2R 55  
 105 A2S 56  
 106 A2T 57  
 107 A2U 58  
 108 A2V 59  
 109 A2W 60  
 110 A2X 61  
 111 A2Y 62  
 112 A2Z 63  
 113 A2A 64  
 114 A2B 65  
 115 A2C 66  
 116 A2D 67  
 117 A2E 68  
 118 A2F 69  
 119 A2G 70  
 120 A2H 71  
 121 A2I 72  
 122 A2J 73  
 123 A2K 74  
 124 A2L 75  
 125 A2M 76  
 126 A2N 77  
 127 A2O 78  
 128 A2P 79  
 129 A2Q 80  
 130 A2R 81  
 131 A2S 82  
 132 A2T 83  
 133 A2U 84  
 134 A2V 85  
 135 A2W 86  
 136 A2X 87  
 137 A2Y 88  
 138 A2Z 89  
 139 A2A 90  
 140 A2B 91  
 141 A2C 92  
 142 A2D 93  
 143 A2E 94  
 144 A2F 95  
 145 A2G 96  
 146 A2H 97  
 147 A2I 98  
 148 A2J 99  
 149 A2K 100  
 150 A2L 101  
 151 A2M 102  
 152 A2N 103  
 153 A2O 104  
 154 A2P 105  
 155 A2Q 106  
 156 A2R 107  
 157 A2S 108  
 158 A2T 109  
 159 A2U 110  
 160 A2V 111  
 161 A2W 112  
 162 A2X 113  
 163 A2Y 114  
 164 A2Z 115  
 165 A2A 116  
 166 A2B 117  
 167 A2C 118  
 168 A2D 119  
 169 A2E 120  
 170 A2F 121  
 171 A2G 122  
 172 A2H 123  
 173 A2I 124  
 174 A2J 125  
 175 A2K 126  
 176 A2L 127  
 177 A2M 128  
 178 A2N 129  
 179 A2O 130  
 180 A2P 131  
 181 A2Q 132  
 182 A2R 133  
 183 A2S 134  
 184 A2T 135  
 185 A2U 136  
 186 A2V 137  
 187 A2W 138  
 188 A2X 139  
 189 A2Y 140  
 190 A2Z 141  
 191 A2A 142  
 192 A2B 143  
 193 A2C 144  
 194 A2D 145  
 195 A2E 146  
 196 A2F 147  
 197 A2G 148  
 198 A2H 149  
 199 A2I 150  
 200 A2J 151  
 201 A2K 152  
 202 A2L 153  
 203 A2M 154  
 204 A2N 155  
 205 A2O 156  
 206 A2P 157  
 207 A2Q 158  
 208 A2R 159  
 209 A2S 160  
 210 A2T 161  
 211 A2U 162  
 212 A2V 163  
 213 A2W 164  
 214 A2X 165  
 215 A2Y 166  
 216 A2Z 167  
 217 A2A 168  
 218 A2B 169  
 219 A2C 170  
 220 A2D 171  
 221 A2E 172  
 222 A2F 173  
 223 A2G 174  
 224 A2H 175  
 225 A2I 176  
 226 A2J 177  
 227 A2K 178  
 228 A2L 179  
 229 A2M 180  
 230 A2N 181  
 231 A2O 182  
 232 A2P 183  
 233 A2Q 184  
 234 A2R 185  
 235 A2S 186  
 236 A2T 187  
 237 A2U 188  
 238 A2V 189  
 239 A2W 190  
 240 A2X 191  
 241 A2Y 192  
 242 A2Z 193  
 243 A2A 194  
 244 A2B 195  
 245 A2C 196  
 246 A2D 197  
 247 A2E 198  
 248 A2F 199  
 249 A2G 200  
 250 A2H 201  
 251 A2I 202  
 252 A2J 203  
 253 A2K 204  
 254 A2L 205  
 255 A2M 206  
 256 A2N 207  
 257 A2O 208  
 258 A2P 209  
 259 A2Q 210  
 260 A2R 211  
 261 A2S 212  
 262 A2T 213  
 263 A2U 214  
 264 A2V 215  
 265 A2W 216  
 266 A2X 217  
 267 A2Y 218  
 268 A2Z 219  
 269 A2A 220  
 270 A2B 221  
 271 A2C 222  
 272 A2D 223  
 273 A2E 224  
 274 A2F 225  
 275 A2G 226  
 276 A2H 227  
 277 A2I 228  
 278 A2J 229  
 279 A2K 230  
 280 A2L 231  
 281 A2M 232  
 282 A2N 233  
 283 A2O 234  
 284 A2P 235  
 285 A2Q 236  
 286 A2R 237  
 287 A2S 238  
 288 A2T 239  
 289 A2U 240  
 290 A2V 241  
 291 A2W 242  
 292 A2X 243  
 293 A2Y 244  
 294 A2Z 245  
 295 A2A 246  
 296 A2B 247  
 297 A2C 248  
 298 A2D 249  
 299 A2E 250  
 300 A2F 251  
 301 A2G 252  
 302 A2H 253  
 303 A2I 254  
 304 A2J 255  
 305 A2K 256  
 306 A2L 257  
 307 A2M 258  
 308 A2N 259  
 309 A2O 260  
 310 A2P 261  
 311 A2Q 262  
 312 A2R 263  
 313 A2S 264  
 314 A2T 265  
 315 A2U 266  
 316 A2V 267  
 317 A2W 268  
 318 A2X 269  
 319 A2Y 270  
 320 A2Z 271  
 321 A2A 272  
 322 A2B 273  
 323 A2C 274  
 324 A2D 275  
 325 A2E 276  
 326 A2F 277  
 327 A2G 278  
 328 A2H 279  
 329 A2I 280  
 330 A2J 281  
 331 A2K 282  
 332 A2L 283  
 333 A2M 284  
 334 A2N 285  
 335 A2O 286  
 336 A2P 287  
 337 A2Q 288  
 338 A2R 289  
 339 A2S 290  
 340 A2T 291  
 341 A2U 292  
 342 A2V 293  
 343 A2W 294  
 344 A2X 295  
 345 A2Y 296  
 346 A2Z 297  
 347 A2A 298  
 348 A2B 299  
 349 A2C 300  
 350 A2D 301  
 351 A2E 302  
 352 A2F 303  
 353 A2G 304  
 354 A2H 305  
 355 A2I 306  
 356 A2J 307  
 357 A2K 308  
 358 A2L 309  
 359 A2M 310  
 360 A2N 311  
 361 A2O 312  
 362 A2P 313  
 363 A2Q 314  
 364 A2R 315  
 365 A2S 316  
 366 A2T 317  
 367 A2U 318  
 368 A2V 319  
 369 A2W 320  
 370 A2X 321  
 371 A2Y 322  
 372 A2Z 323  
 373 A2A 324  
 374 A2B 325  
 375 A2C 326  
 376 A2D 327  
 377 A2E 328  
 378 A2F 329  
 379 A2G 330  
 380 A2H 331  
 381 A2I 332  
 382 A2J 333  
 383 A2K 334  
 384 A2L 335  
 385 A2M 336  
 386 A2N 337  
 387 A2O 338  
 388 A2P 339  
 389 A2Q 340  
 390 A2R 341  
 391 A2S 342  
 392 A2T 343  
 393 A2U 344  
 394 A2V 345  
 395 A2W 346  
 396 A2X 347  
 397 A2Y 348  
 398 A2Z 349  
 399 A2A 350  
 400 A2B 351  
 401 A2C 352  
 402 A2D 353  
 403 A2E 354  
 404 A2F 355  
 405 A2G 356  
 406 A2H 357  
 407 A2I 358  
 408 A2J 359  
 409 A2K 360  
 410 A2L 361  
 411 A2M 362  
 412 A2N 363  
 413 A2O 364  
 414 A2P 365  
 415 A2Q 366  
 416 A2R 367  
 417 A2S 368  
 418 A2T 369  
 419 A2U 370  
 420 A2V 371  
 421 A2W 372  
 422 A2X 373  
 423 A2Y 374  
 424 A2Z 375  
 425 A2A 376  
 426 A2B 377  
 427 A2C 378  
 428 A2D 379  
 429 A2E 380  
 430 A2F 381  
 431 A2G 382  
 432 A2H 383  
 433 A2I 384  
 434 A2J 385  
 435 A2K 386  
 436 A2L 387  
 437 A2M 388  
 438 A2N 389  
 439 A2O 390  
 440 A2P 391  
 441 A2Q 392  
 442 A2R 393  
 443 A2S 394  
 444 A2T 395  
 445 A2U 396  
 446 A2V 397  
 447 A2W 398  
 448 A2X 399  
 449 A2Y 400  
 450 A2Z 401  
 451 A2A 402  
 452 A2B 403  
 453 A2C 404  
 454 A2D 405  
 455 A2E 406  
 456 A2F 407  
 457 A2G 408  
 458 A2H 409  
 459 A2I 410  
 460 A2J 411  
 461 A2K 412  
 462 A2L 413  
 463 A2M 414  
 464 A2N 415  
 465 A2O 416  
 466 A2P 417  
 467 A2Q 418  
 468 A2R 419  
 469 A2S 420  
 470 A2T 421  
 471 A2U 422  
 472 A2V 423  
 473 A2W 424  
 474 A2X 425  
 475 A2Y 426  
 476 A2Z 427  
 477 A2A 428  
 478 A2B 429  
 479 A2C 430  
 480 A2D 431  
 481 A2E 432  
 482 A2F 433  
 483 A2G 434  
 484 A2H 435  
 485 A2I 436  
 486 A2J 437  
 487 A2K 438  
 488 A2L 439  
 489 A2M 440  
 490 A2N 441  
 491 A2O 442  
 492 A2P 443  
 493 A2Q 444  
 494 A2R 445  
 495 A2S 446  
 496 A2T 447  
 497 A2U 448  
 498 A2V 449  
 499 A2W 450  
 500 A2X 451  
 501 A2Y 452  
 502 A2Z 453  
 503 A2A 454  
 504 A2B 455  
 505 A2C 456  
 506 A2D 457  
 507 A2E 458  
 508 A2F 459  
 509 A2G 460  
 510 A2H 461  
 511 A2I 462  
 512 A2J 463  
 513 A2K 464  
 514 A2L 465  
 515 A2M 466  
 516 A2N 467  
 517 A2O 468  
 518 A2P 469  
 519 A2Q 470  
 520 A2R 471  
 521 A2S 472  
 522 A2T 473  
 523 A2U 474  
 524 A2V 475  
 525 A2W 476  
 526 A2X 477  
 527 A2Y 478  
 528 A2Z 479  
 529 A2A 480  
 530 A2B 481  
 531 A2C 482  
 532 A2D 483  
 533 A2E 484  
 534 A2F 485  
 535 A2G 486  
 536 A2H 487  
 537 A2I 488  
 538 A2J 489  
 539 A2K 490  
 540 A2L 491  
 541 A2M 492  
 542 A2N 493  
 543 A2O 494  
 544 A2P 495  
 545 A2Q 496  
 546 A2R 497  
 547 A2S 498  
 548 A2T 499  
 549 A2U 500  
 550 A2V 501  
 551 A2W 502  
 552 A2X 503  
 553 A2Y 504  
 554 A2Z 505  
 555 A2A 506  
 556 A2B 507  
 557 A2C 508  
 558 A2D 509  
 559 A2E 510  
 560 A2F 511  
 561 A2G 512  
 562 A2H 513  
 563 A2I 514  
 564 A2J 515  
 565 A2K 516  
 566 A2L 517  
 567 A2M 518  
 568 A2N 519  
 569 A2O 520  
 570 A2P 521  
 571 A2Q 522  
 572 A2R 523  
 573 A2S 524  
 574 A2T 525  
 575 A2U 526  
 576 A2V 527  
 577 A2W 528  
 578 A2X 529  
 579 A2Y 530  
 580 A2Z 531  
 581 A2A 532  
 582 A2B 533  
 583 A2C 534  
 584 A2D 535  
 585 A2E 536  
 586 A2F 537  
 587 A2G 538  
 588 A2H 539  
 589 A2I 540  
 590 A2J 541  
 591 A2K 542  
 592 A2L 543  
 593 A2M 544  
 594 A2N 545  
 595 A2O 546  
 596 A2P 547  
 597 A2Q 548  
 598 A2R 549  
 599 A2S 550  
 600 A2T 551  
 601 A2U 552  
 602 A2V 553  
 603 A2W 554  
 604 A2X 555  
 605 A2Y 556  
 606 A2Z 557  
 607 A2A 558  
 608 A2B 559  
 609 A2C 560  
 610 A2D 561  
 611 A2E 562  
 612 A2F 563  
 613 A2G 564  
 614 A2H 565  
 615 A2I 566  
 616 A2J 567  
 617 A2K 568  
 618 A2L 569  
 619 A2M 570  
 620 A2N 571  
 621 A2O 572  
 622 A2P 573  
 623 A2Q 574  
 624 A2R 575  
 625 A2S 576  
 626 A2T 577  
 627 A2U 578  
 628 A2V 579  
 629 A2W 580  
 630 A2X 581  
 631 A2Y 582  
 632 A2Z 583  
 633 A2A 584  
 634 A2B 585  
 635 A2C 586  
 636 A2D 587  
 637 A2E 588  
 638 A2F 589  
 639 A2G 590  
 640 A2H 591  
 641 A2I 592  
 642 A2J 593  
 643 A2K 594  
 644 A2L 595  
 645 A2M 596  
 646 A2N 597  
 647 A2O 598  
 648 A2P 599  
 649 A2Q 600  
 650 A2R 601  
 651 A2S 602  
 652 A2T 603  
 653 A2U 604  
 654 A2V 605  
 655 A2W 606  
 656 A2X 607  
 657 A2Y 608  
 658 A2Z 609  
 659 A2A 610  
 660 A2B 611  
 661 A2C 612  
 662 A2D 613  
 663 A2E 614  
 664 A2F 615  
 665 A2G 616  
 666 A2H 617  
 667 A2I 618  
 668 A2J 619  
 669 A2K 620  
 670 A2L 621  
 671 A2M 622  
 672 A2N 623  
 673 A2O 624  
 674 A2P 625  
 675 A2Q 626  
 676 A2R 627  
 677 A2S 628  
 678 A2T 629  
 679 A2U 630  
 680 A2V 631  
 681 A2W 632  
 682 A2X 633  
 683 A2Y 634  
 684 A2Z 635  
 685 A2A 636  
 686 A2B 637  
 687 A2C 638  
 688 A2D 639  
 689 A2E 640  
 690 A2F 641  
 691 A2G 642  
 692 A2H 643  
 693 A2I 644

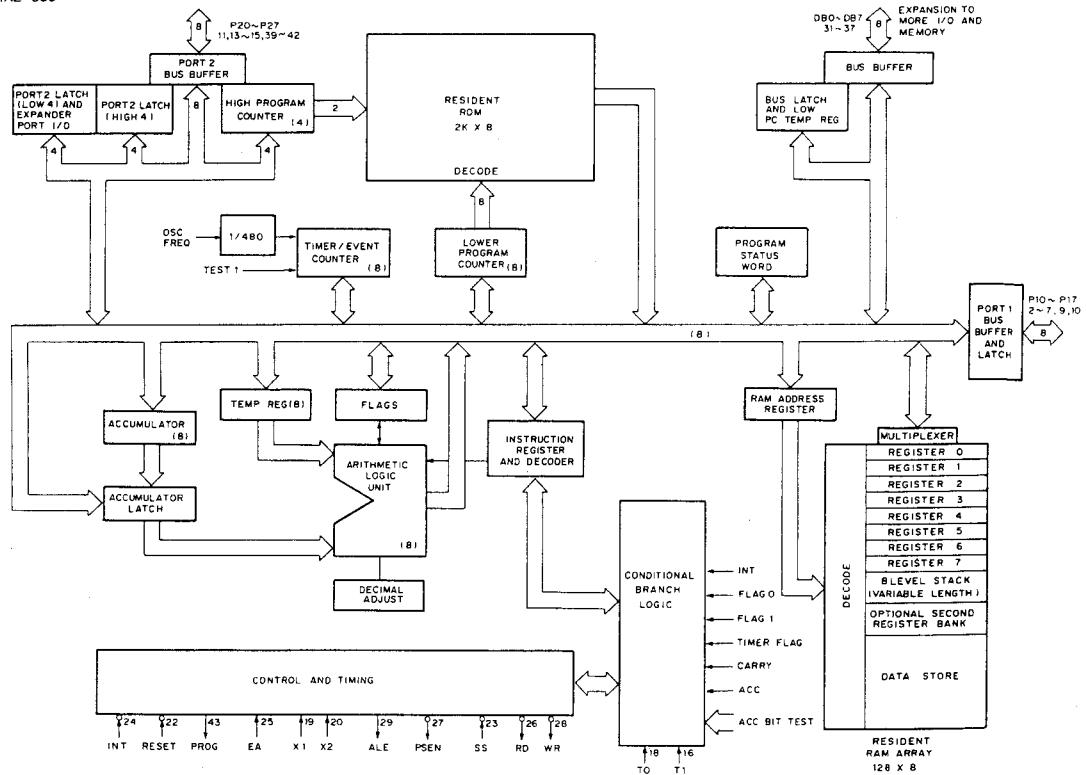
## MSM80C49GS (OKI) FLAT PACKAGE

C-MOS 8-BIT MICROPROCESSOR

- TOP VIEW -



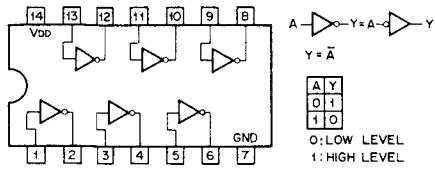
15	P27	D87	37	ALE ; ADDRESS LATCH ENABLE
14	P26	D86	36	DB0 - 7 ; DATA BUS
13	P25	D85	35	EA ; EXTERNAL ACCESS
11	P24	D84	34	INT ; INTERRUPT
10	P23	D83	33	P20 - 27 ; I/O PORT 2
9	P22	D82	32	P10 - 17 ; I/O PORT 1
8	P21	D81	31	PROG ; PROGRAM PULSE
7	P20	D80	30	PSEN ; PROGRAM STORE ENABLE
6			29	RD ; READ
5			28	RESET ; INITIALIZING IN
4			27	SS ; SINGLE STEP
3			26	TO ; TEST O I/O
2			25	T1 ; TEST 1 IN
1			24	Vcc ; +5V
			23	PSEN ; +5V FOR INTERNAL DATA MEMORY
			22	WR ; WRITE
			21	X1, X2 ; GRYSTAL OSC
			20	
			19	
			18	
			17	
			16	
			15	
			14	
			13	
			12	
			11	
			10	
			9	
			8	
			7	
			6	
			5	
			4	
			3	
			2	
			1	
			0	



SN74HC04NS (TI) ( $V_{DD} = +2$  to  $+6V$ ) FLAT PACKAGE

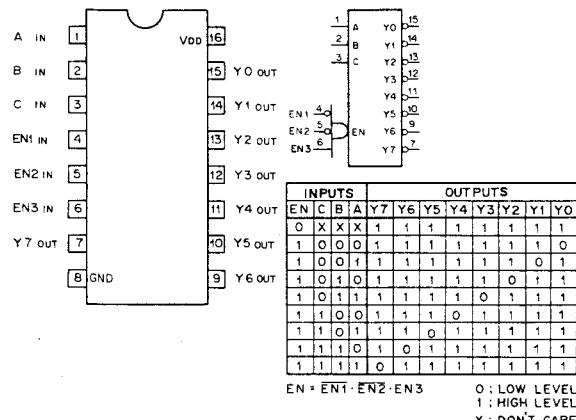
C-MOS HEX INVERTER

- TOP VIEW -

SN74HC138NS (TI) ( $V_{DD} = +2$  to  $+6V$ ) FLAT PACKAGE

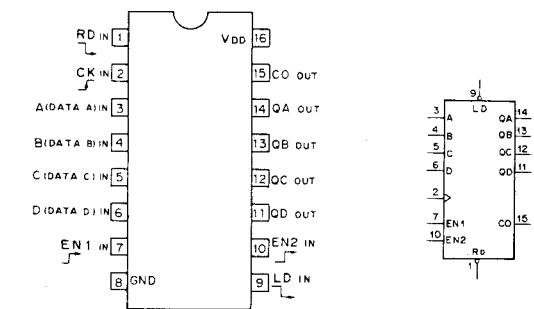
C-MOS 3-TO-8 LINE DECODER/DEMULTIPLEXER

- TOP VIEW -

SN74HC163NS (TI) ( $V_{DD} = +2$  to  $+6V$ ) FLAT PACKAGE

C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER

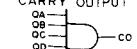
- TOP VIEW -



## MODE SELECTION

CONTROL INPUTS			MODE	
RD	LD	EN1	EN2	RESET (SYNCHRONOUS)
0 X X X			PRESET (SYNCHRONOUS)	
1 0 X X			NO COUNT	
1 1 0 X			NO COUNT	
1 1 1 1			COUNT	

## CARRY OUTPUT "CO"



CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

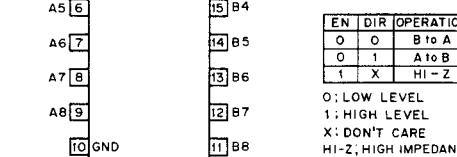
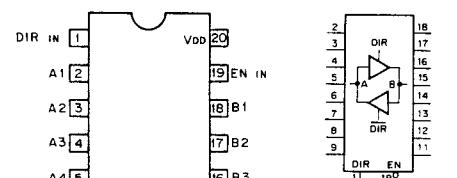
## COUNT SEQUENCE

COUNT	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

SN74HC245NS (TI) ( $V_{DD} = +2$  to  $+6V$ ) FLAT PACKAGE

C-MOS BILATERAL BUS TRANSCEIVERS WITH 3-STATE OUTPUTS

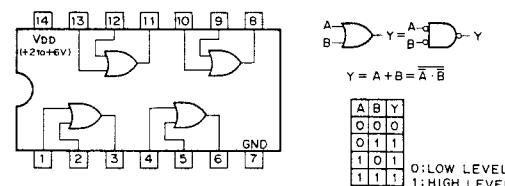
- TOP VIEW -



## SN74HC32NS (TI) FLAT PACKAGE

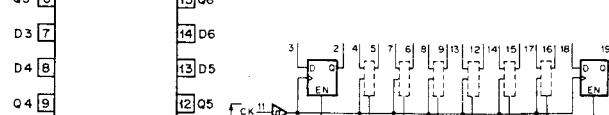
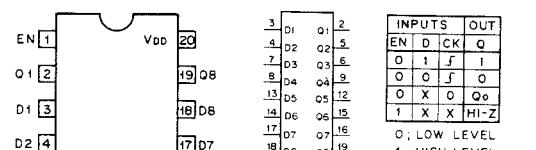
C-MOS 2-INPUT OR GATE

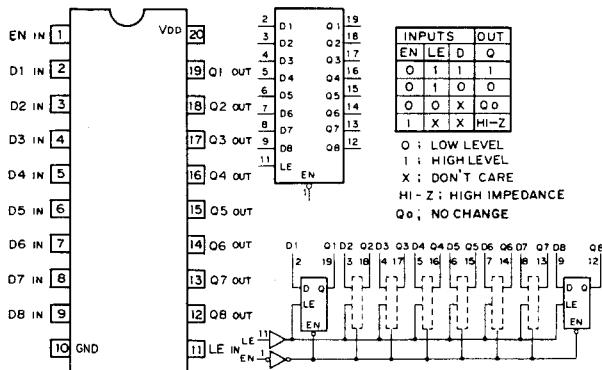
- TOP VIEW -

SN74HC374NS (TI) ( $V_{DD} = +2$  to  $+6V$ ) FLAT PACKAGE

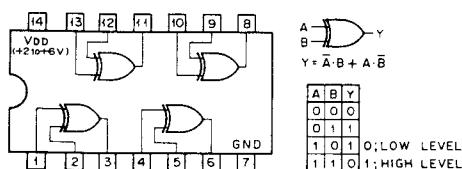
C-MOS 3-STATE OCTAL D-TYPE FLIP-FLOP

- TOP VIEW -

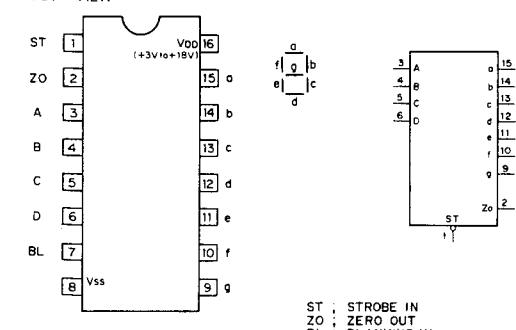


SN74HC573NS (TI) ( $V_{DD} = +2$  to  $+6V$ ) FLAT PACKAGEC-MOS 3-STATE OUTPUTS OCTAL LATCHES  
- TOP VIEW -

## SN74HC86NS (TI) FLAT PACKAGE

C-MOS EXCLUSIVE OR GATE  
- TOP VIEW -

## TC5068BP (TOSHIBA)

C-MOS BCD-TO-SEVEN-SEGMENT LATCH/DECODER/DRIVER  
- TOP VIEW -

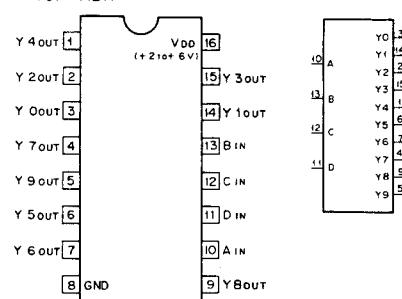
INPUT		OUTPUT(OPEN DRAIN)							DISPLAY (HEXADECIMAL)		DECIMAL			
ST	BL	D	C	B	A	a	b	c	d	e	f	g	ZERO OUT	
X	1	x	x	x	x	0	0	0	0	0	0	*	BLANK	0
1	0	0	0	0	0	1	1	1	1	0	1	0	0	0
1	0	0	0	0	1	0	1	0	0	0	0	0	0	1
1	0	0	0	1	0	1	1	0	1	0	1	0	2	2
1	0	0	0	1	1	1	1	0	0	0	1	0	3	3
1	0	0	1	0	0	0	1	0	0	0	1	0	4	4
1	0	0	1	0	1	0	1	0	0	1	1	0	5	5
1	0	0	1	1	0	1	1	1	1	1	1	0	6	6
1	0	0	1	1	1	0	1	1	1	1	1	0	7	7
1	0	0	1	1	1	1	1	1	1	1	1	0	8	8
1	0	0	1	1	1	1	1	1	1	1	1	0	9	9
1	0	1	0	1	0	1	1	1	1	1	1	0	A	10
1	0	1	0	1	0	0	1	1	1	1	1	0	B	11
1	0	1	1	0	1	0	1	1	1	0	1	0	C	12
1	0	1	1	1	0	1	0	1	1	1	0	0	D	13
1	0	1	1	1	1	0	0	1	1	1	1	0	E	14
1	0	1	1	1	1	1	0	0	0	1	1	0	F	15
0	0	X	X	X	X	*	*	*	*	*	*	*		

X: DON'T CARE

\*: UNDETERMINED

★: DEPENDS UPON THE BCD CODE  
PREVIOUSLY APPLIED WHEN ST='H'

## TC74HC4028F (TOSHIBA) FLAT PACKAGE

C-MOS BCD TO DECIMAL DECODER  
- TOP VIEW -

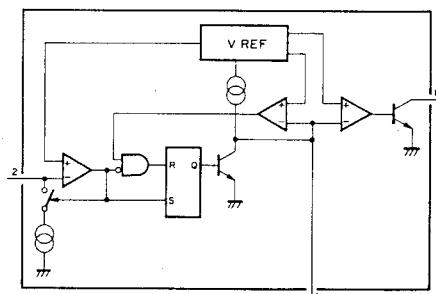
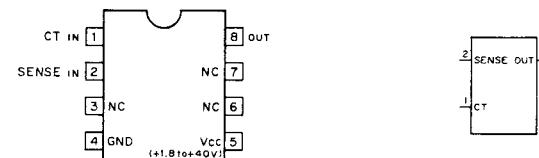
STATE	INPUTS			OUTPUTS										
	D	C	B	A	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9
0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1	0	0	1	0	1	0	0	0	0	0	0	0	0	0
2	0	0	1	0	0	1	0	0	0	0	0	0	0	0
3	0	1	1	1	0	0	0	1	0	0	0	0	0	0
4	0	1	0	0	0	0	0	0	1	0	0	0	0	0
5	0	1	0	1	0	0	0	0	0	1	0	0	0	0
6	0	1	1	0	0	0	0	0	0	0	1	0	0	0
7	0	1	1	0	0	0	0	0	0	0	0	1	0	0
8	1	X	X	0	0	0	0	0	0	0	0	0	1	0
9	1	X	X	1	0	0	0	0	0	0	0	0	1	1

O: LOW LEVEL  
1: HIGH LEVEL  
X: DON'T CARE

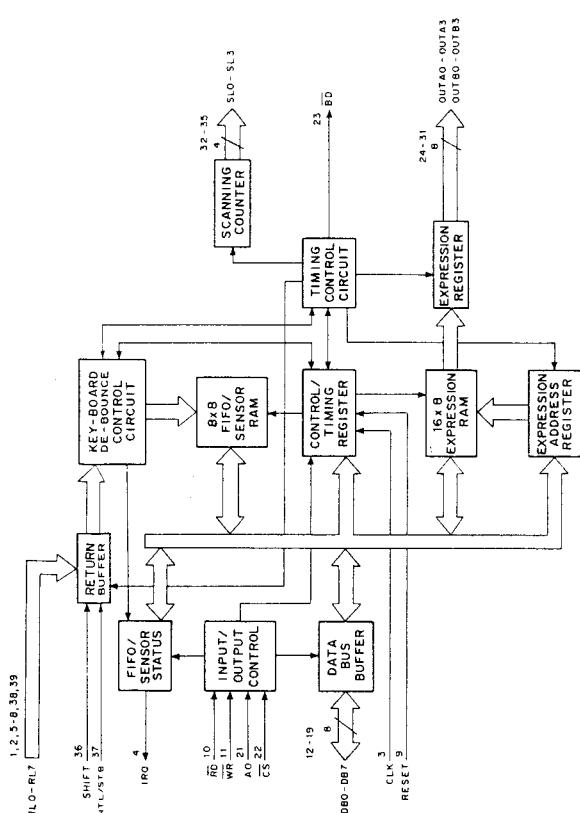
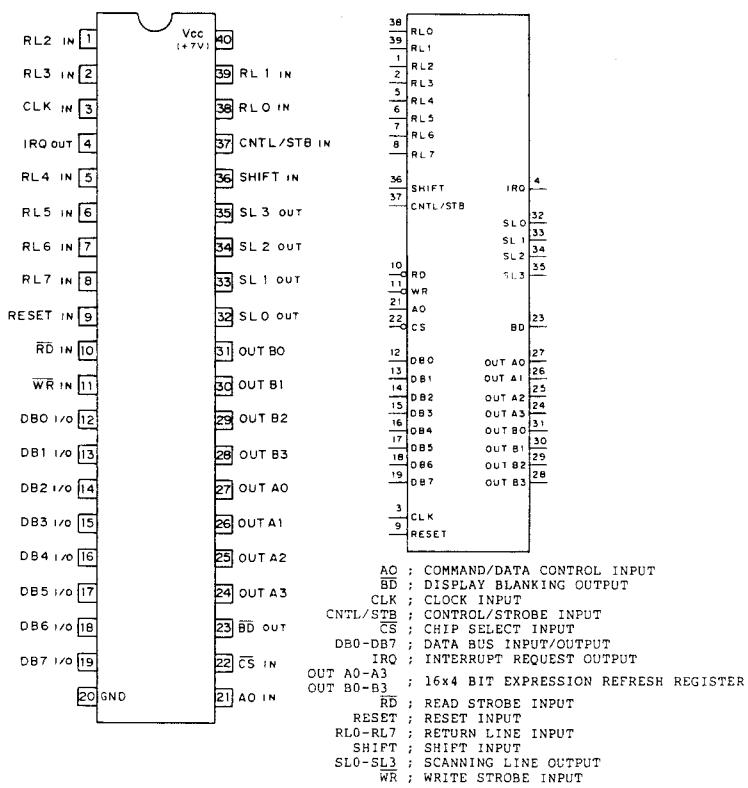
## TL7700CPS (TI) FLAT PACKAGE

VARIABLE SUPPLY VOLTAGE SUPERVISOR

- TOP VIEW -

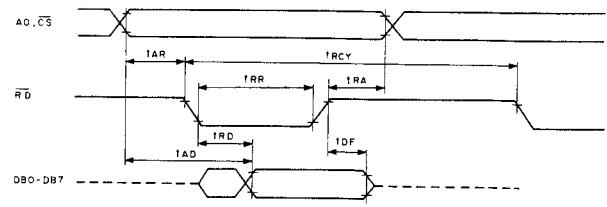


TMP82C79M-2 (TOSHIBA) FLAT PACKAGE  
C-MOS PROGRAMMABLE KEY-BOARD/DISPLAY INTERFACE DEVICE  
- TOP VIEW -

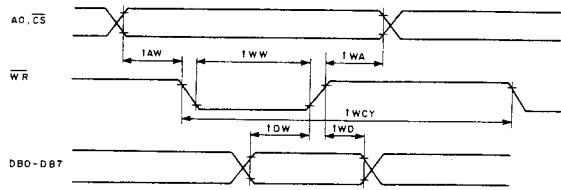


1, 2, 5-8, 38, 39

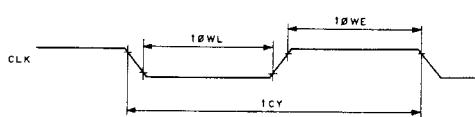
READ



**WRITES**

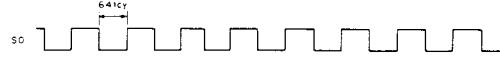


CLOG



SCANNING

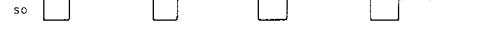
ENCODE



—



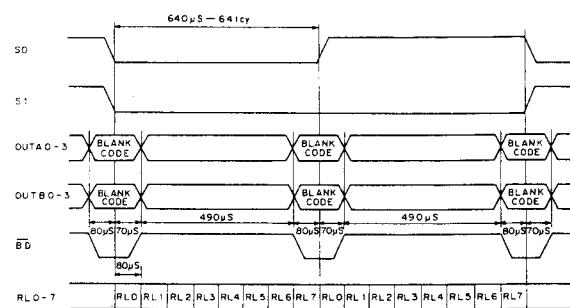
## DECODE



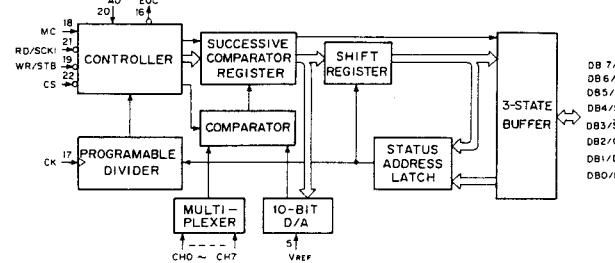
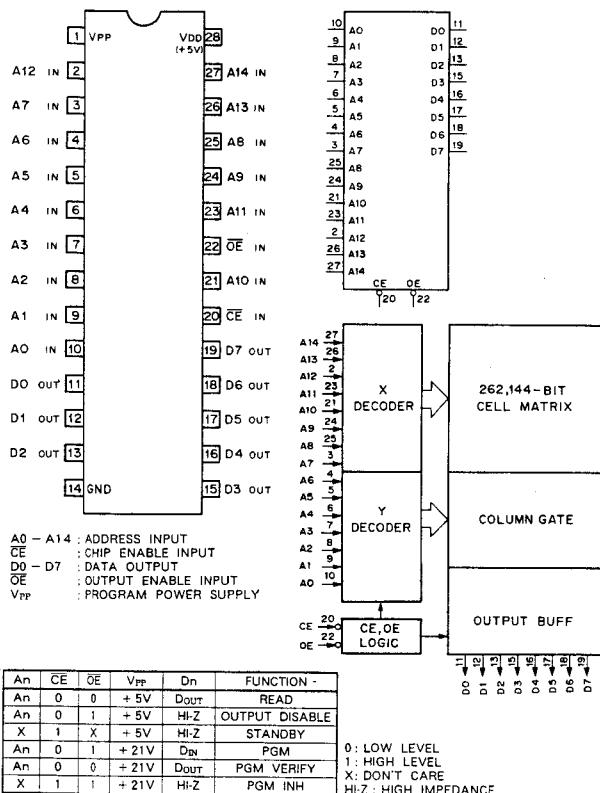
51



## EXPRESSION



## TMS27C256-25 (TI) (ACCESS TIME = 250nS)

C-MOS 256K(32Kx8)-BIT ERASABLE PROM WITH 3-STATE OUTPUTS  
- TOP VIEW -

MC	MODE
0	SERIAL
1	PARALLEL

## PARALLEL MODE

CS	WR	RD	AO	MODE
1	X	X	X	HIGH IMPEDANCE
0	1	1	X	HIGH IMPEDANCE
0	0	1	0	*1 ANALOG CHANNEL SELECT
0	0	1	1	*2 CODE SELECT / *3 CLOCK RATE SELECT
0	1	0	0	*4 LOW-BYTE DATA OUTPUT
0	1	0	1	*4 HIGH-BYTE DATA OUTPUT
0	0	0	X	INHIBIT

0: LOW LEVEL X: DON'T CARE  
1: HIGH LEVEL

SEL2	SEL1	SEL0	MPX CHAN.
0	0	0	CHO
0	0	1	CH1
0	1	0	CH2
0	1	1	CH3
1	0	0	CH4
1	0	1	CH5
1	1	0	CH6
1	1	1	CH7

## \*2 CODE SELECT

CODE	CODE SELECT
0	BINARY DATA
1	2'S COMPLEMENT DATA

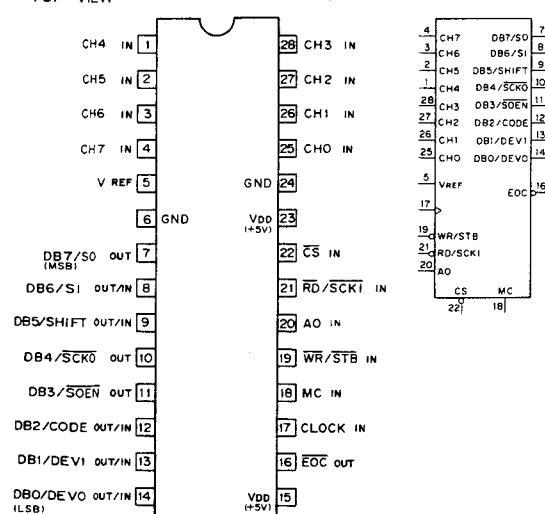
## \*3 CLOCK RATE SELECT

DEV1	DEV0	CLOCK RATE
0	0	1
0	1	1/2
1	0	1/4
1	1	1/8

## \*4 LOW/HIGH-BYTE DATA

	DB7	DB6	DB5	DB4	DB3	DB2	DB1	DB0
HIGH-BYTE	MSB	2ND	3RD	4TH	5TH	6TH	7TH	8TH
LOW-BYTE	9TH	0	0	0	0	0	0	0

## uPD7004C (NEC)

C-MOS 10-BIT SUCCESSIVE COMPARATOR TYPE A/D CONVERTER  
- TOP VIEW -

Pin Descriptions:

AO	; CONTROL ADDRESS INPUT	SCKI	; SERIAL CLOCK INPUT
CHO~7	; ANALOG INPUT	SCKO	; SERIAL CLOCK OUTPUT
CODE	; CODE SELECT (12'S COMPLEMENT/BINARY) INPUT	SHIFT	; SHIFT SELECT (LSB FIRST/MSB FIRST)
CS	; CHIP SELECT INPUT	SI	; SERIAL INPUT
DB0~7	; DATA BUS INPUT/OUTPUT	SO	; SERIAL OUTPUT
DEVO,		SOEN	; SERIAL OUTPUT ENABLE OUTPUT
DEV1	; CLOCK RATE SELECT INPUT	STB	; ADDRESS WRITE STROBE SIGNAL INPUT
EOC	; CONVERSION ENDING SIGNAL OUTPUT	WR	; WRITE SIGNAL INPUT
MC	; MODE SELECT INPUT		
RD	; READ SIGNAL INPUT		



## SECTION C SPARE PARTS

### PARTS INFORMATION

#### 1. Safety Related Component Warning

Components indentified by shading marked with  on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose parts numbers appear as shown in this manual or in service manual supplements published by Sony.

2. Replace Parts that are supplied from Sony Parts Center can sometimes have different shape and external appearance than what are actually used in equipment. This is due to "**accommodating the improved parts and/or engineering changes**" or "**standardization of genuine parts**".
  - This manual's exploded view and electrical spare parts lists are indicating the parts numbers of "the standardized genuine parts at present."
  - Regarding engineering parts and diagrams changes in our engineering department, refer to Sony service bulletins and service manual supplements.
3. The parts marked with "S" in the SP column of the exploded views and electrical spare parts list are normally required for routine service work. Orders for parts marked with "O" will be processed, but allow for additional delivery time.
4. Item with no parts number and/or no description are not stocked because they are seldom required for routine service.
5. Regarding engineering parts changes in our engineering department, refer to SECTION D "CHANGED PARTS".

#### 6. Abbreviation

REF.NO.	DESCRIPTION	REF.NO.	DESCRIPTION	REF.NO.	DESCRIPTION
BT	BATTERY	F	FUSE	RB, RP	RESISTOR BLOCK
BZ	BUZZER	FB	FERRITE BEAD	RY	RELAY
C	CAPACITOR	FL	FILTER	RV	VARIABLE RESISTOR
CF	CERAMIC FILTER	IC	IC	S	SWITCH
CN	CONNECTOR	L	INDUCTOR	T	TRANSFORMER
CP	COMBINATION PARTS	LV	VARIABLE INDUCTOR	TH	THERMISTOR
CV	VARIABLE CAPACITOR	PL	PILOT LAMP	TM	TIMER
D	DIODE	Q	TRANSISTOR	VDR	VARISTOR
DL	DELAY LINE	R	RESISTOR	X	OSCILLATOR

All capacitors are in micro farads unless otherwise specified.

All inductors are in micro henries unless otherwise specified.

All resistors are in ohms.

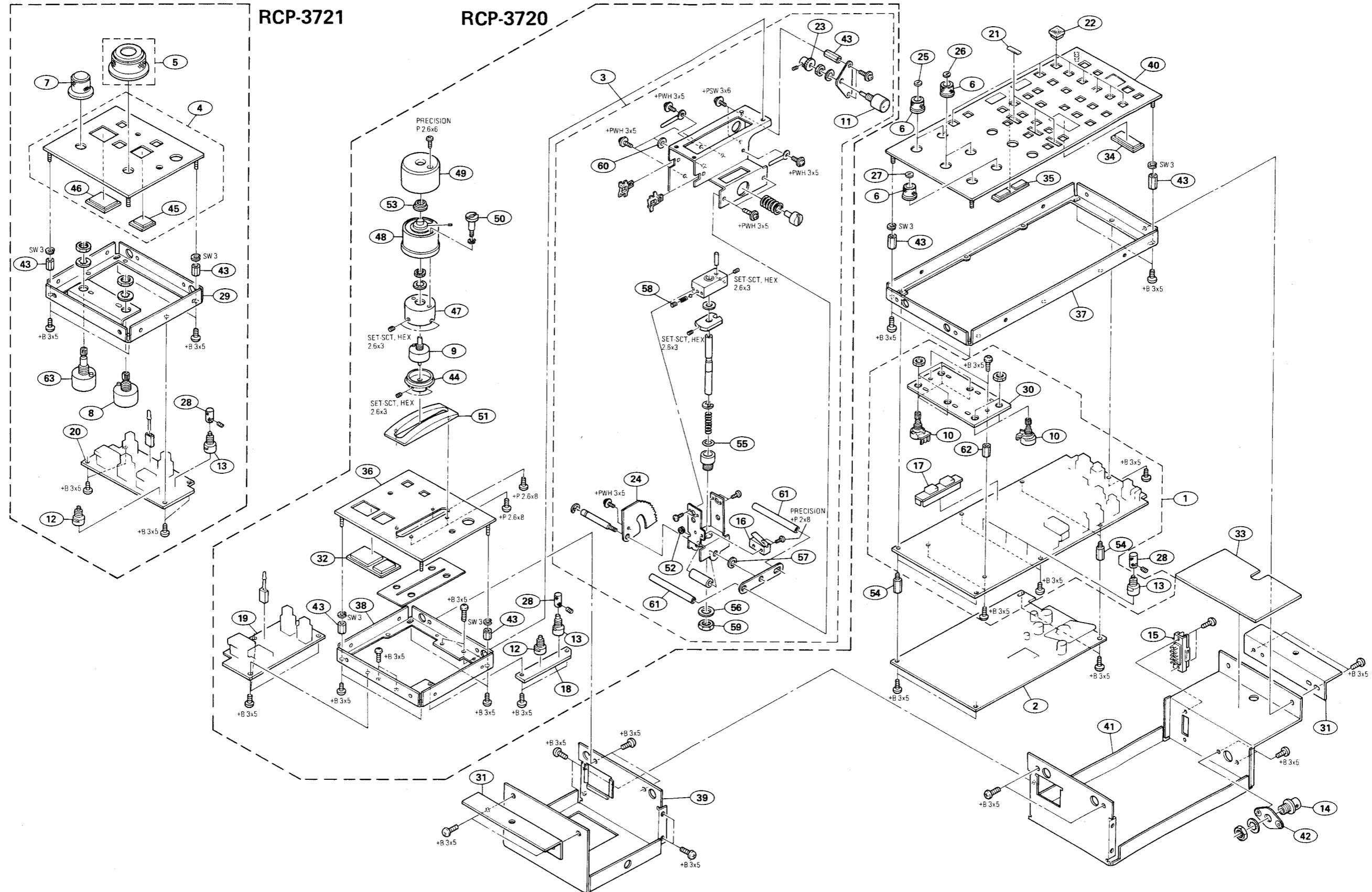
## EXPLODED VIEW

RCP-3720/3721

No.	Part No.	SP Description	
1	A-7515-059-A	o MOUNTED CIRCUIT BOARD, SW-371	46
2	A-7515-060-A	o MOUNTED CIRCUIT BOARD, MPU-53	47
3	A-7612-369-A	o JOY STICK ASSY (RCP-3720 ONLY)	48
4	X-2141-006-1	o PANEL ASSY (D2), CONTROL (RCP-3721 ONLY)	49
5	X-2270-601-0	s KNOB ASSY (RCP-3721 ONLY)	50
6	X-2355-502-1	s KNOB ASSY, CONTROL	51
7	X-3651-342-0	s KNOB ASSY, CONTROL (RCP-3721 ONLY)	52
8	1-224-981-00	s RES, VAR, CERMET 5K "IRIS" (RCP-3721 ONLY)	53
9	1-224-981-31	s RES, VAR, CERMET 5K "MASTER BLACK" (RCP-3720 ONLY)	54
10	1-230-138-00	s RES, VAR, CARBON 5K "BLACK" "WHITE"	55
11	1-230-817-11	s RES, VAR, CARBON 5K "IRIS" (RCP-3720 ONLY)	56
12	1-237-955-11	s RES, VAR, CARBON 10K "SENS"	57
13	1-238-293-11	s RES, VAR, CARBON 10K "KNEE" "GAMMA" "DETAIL" "COARSE"	58
14	1-561-795-00	s SOCKET, CONNECTOR 6P "PREVIEW"	59
15	1-564-968-11	s CONNECTOR, MULTI (SQUARE) 16P "CCU"	60
16	1-570-504-11	s SWITCH, MICRO "LOCK" (RCP-3720 ONLY)	61
17	1-632-786-11	o PRINTED CIRCUIT BOARD, LED-98	62
18	1-632-787-11	o PRINTED CIRCUIT BOARD, IR-12 (RCP-3720 ONLY)	63
19	1-632-788-11	o PRINTED CIRCUIT BOARD, DSP-27 (RCP-3720 ONLY)	
20	1-632-789-11	o PRINTED CIRCUIT BOARD, DSP-28 (RCP-3721 ONLY)	
21	2-141-002-01	o LABEL, FUNCTION	
22	2-141-006-01	o GUARD (SQUARE 6), SWITCH	
23	2-141-013-01	o GEAR (A), IRIS (RCP-3720 ONLY)	
24	2-141-014-01	o GEAR (B), IRIS (RCP-3720 ONLY)	
25	2-141-015-01	o PLATE, COLOR	
26	2-141-015-11	o PLATE, COLOR	
27	2-141-015-21	o PLATE, COLOR	
28	2-141-017-01	s KNOB, RV	
29	2-141-027-01	o CHASSIS (D2), SUB (RCP-3721 ONLY)	
30	2-141-028-01	o PLATE (2), FIXED, RV	
31	2-141-029-01	o BRACKET (2), RACK	
32	2-141-030-01	o COVER (J2), LED (RCP-3720 ONLY)	
33	2-141-031-01	o INSULATOR (2)	
34	2-141-032-01	o COVER (SHUTTER), LED	
35	2-141-033-01	o COVER (FILTER), LED	
36	2-141-036-01	o PANEL (J2), CONTROL (RCP-3720 ONLY)	
37	2-141-037-01	o CHASSIS (B2), SUB	
38	2-141-038-01	o CHASSIS (J2), SUB (RCP-3720 ONLY)	
39	2-141-039-01	o COVER (S)	
40	2-141-040-01	o PANEL (B2), CONTROL	
41	2-141-041-01	o COVER (B2)	
42	2-249-395-02	o NUT, PLATE, 4P	
43	2-280-622-41	o SUPPORT (M3), HEXAGON	
44	2-356-547-01	o TUBE, LEVER FIXED (RCP-3720 ONLY)	
45	2-356-548-01	o COVER (1), LED (RCP-3721 ONLY)	

**EXPLODED VIEW**      **EXPLODED VIEW**

**EXPLODED VIEW**



## SCREWS

+B Cr-N	
7-621-□□-□□	
SIZE	Parts No.
2 x 3	772-08
x 4	772-18
x 5	771-06
x 6	772-38
x 8	772-48
x 10	772-58
x 12	772-68
x 14	772-78
x 16	772-88
x 20	-
2.6 x 3	775-08
x 4	773-86
x 5	770-87
x 6	770-67
x 8	770-99
x 10	773-87
x 12	775-68
x 14	775-78
x 16	775-88
x 20	773-91

+B Cr-N	
7-682-□□-□□	
SIZE	Parts No.
3 x 3	144-01
x 4	145-01
x 5	146-01
x 6	147-01
x 8	148-01
x 10	149-01
x 12	150-01
x 14	151-01
x 16	152-01
x 20	153-01
4 x 4	158-01
x 5	159-01
x 6	160-01
x 8	161-01
x 10	162-01
x 12	163-01
x 14	164-01
x 16	165-01
x 20	166-01
5 x 8	174-01
x 10	175-01
x 12	176-01
x 14	177-01
x 16	178-01
x 20	179-01

+PSW Cr-N	
7-682-□□-□□	
SIZE	Parts No.
3 x 6	947-01
x 8	948-01
x 10	949-01
x 12	950-01
x 14	951-01
x 16	952-01
x 20	953-01
x 25	954-01
x 30	955-01
x 35	956-01
x 40	957-01
4 x 8	961-01
x 10	962-01
x 12	963-01
x 14	964-01
x 16	965-01
x 20	966-01
x 25	967-01
x 30	968-01
x 35	969-01
x 40	970-01

PRECISION +P BZn-N	
7-627-□□-□□	
SIZE	Parts No.
1.7 x 1.6	552-18
x 1.8	-
x 2	552-28
x 2.2	552-08
x 2.5	-
x 3	552-38
x 3.5	552-78
x 4	552-48
x 4.5	-
x 5	552-58
x 5.5	-
x 6	-
2 x 1.8	554-38
x 2	553-18
x 2.2	-
x 2.5	553-28
x 2.8	554-58
x 3	553-38
x 3.5	554-18
x 4	553-48
x 4.5	553-58
x 5	554-28
x 5.5	-
x 6	553-68
x 7	553-88
x 8	553-98
x 10	553-78
2.6 x 2.8	556-08
x 3	-
x 3.5	556-28
x 4	556-38
x 4.5	556-48
x 5	556-58
x 5.5	-
x 6	556-78

+PWH	
7-682-□□-□□	
SIZE	Parts No.
2.6 x 4	902-11
x 5	902-21
x 6	902-31
x 8	902-31
x 10	902-31
x 12	902-51
x 14	902-51
3 x 5	903-01
x 6	903-11
x 8	903-21
x 10	903-31
x 12	903-41
x 14	903-41
4 x 6	904-01
x 8	904-11
x 10	904-21
x 12	904-31
x 14	904-41
x 16	904-41
x 20	904-41

HEXAGON SET SCREW (WP) SNCM6-PD	
7-621-□□-□□	
SIZE	Parts No.
2.6 x 3	734-09
2.6 x 4	735-09
2.6 x 5	736-09
2.6 x 6	737-09

TOTSU P BZn-N NON SLIT	
7-685-□□-□□	
SIZE	Parts No.
2 x 4	102-19
x 5	103-19
2 x 6	104-19
x 8	105-19
2 x 10	106-19
x 12	107-19
2.6 x 4	131-19
2.6 x 5	132-19
2.6 x 6	133-19
2.6 x 8	134-19
2.6 x 10	135-19
2.6 x 12	136-19
2.6 x 14	137-19
2.6 x 16	138-19
3 x 5	144-19
x 6	145-19
3 x 8	146-19
3 x 10	147-19
x 12	148-19
3 x 14	149-19
x 16	150-19
3 x 18	151-19
3 x 20	152-19
3 x 25	153-19
3 x 30	154-19
3 x 35	155-19
4 x 6	158-19
x 8	159-19
x 10	160-19
x 12	161-19
x 14	162-19
x 16	163-19
x 20	164-19
x 25	165-19
x 30	166-19
x 35	167-19

**DSP-27 BOARD "RCP-3720 ONLY"**

Ref. No. or Q'ty	Part No.	SP Description
4pcs	1-563-521-11	o CONNECTOR, 20P, FEMALE
1pc	1-632-788-11	o PRINTED CIRCUIT BOARD, "DSP-27"
CN1	1-566-405-11	o CONNECTOR, 30P, MALE
CN2	1-506-471-11	o CONNECTOR, 6P, MALE
CN3	1-506-469-11	o CONNECTOR, 4P, MALE
D1	8-719-939-53	s DIODE LB-203ML
D2	8-719-948-06	s DIODE LB-202ML
D3	8-719-938-68	s GL-3HY8
S1	1-554-048-00	s SWITCH, PUSH
S2	1-554-048-00	s SWITCH, PUSH

**DSP-28 BOARD "RCP-3721 ONLY"**

Ref. No. or Q'ty	Part No.	SP Description
4pcs	1-563-521-11	o CONNECTOR, 20P, FEMALE
1pc	1-632-789-11	o PRINTED CIRCUIT BOARD, "DSP-28"
1pc	2-141-017-01	s KNOB, RV
1pc	7-621-734-09	s SET-SCT, HEX. 2.6X3
CN1	1-566-405-11	o CONNECTOR, 30P, MALE
CN2	1-506-469-11	o CONNECTOR, 4P, MALE
D1	8-719-939-53	s DIODE LB-203ML
D2	8-719-948-06	s DIODE LB-202ML
D3	8-719-938-68	s GL-3HY8
RV1	1-238-293-11	s RES. VAR, CARBON 10K
RV2	1-237-955-11	s CARBON 10K
S1	1-554-048-00	s SWITCH, PUSH
S2	1-554-048-00	s SWITCH, PUSH
S3	1-554-041-11	s SWITCH, PUSH

**IR-12 BOARD**

Ref. No. or Q'ty	Part No.	SP Description
1pc	1-632-787-11	o PRINTED CIRCUIT BOARD, "IR-12"
1pc	2-141-017-01	s KNOB, RV
1pc	7-621-734-09	s SET-SCT, HEX. 2.6X3
RV1	1-238-293-11	s RES. VAR, CARBON 10K
RV2	1-237-955-11	s CARBON 10K

**MPU-53 BOARD**

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-7515-060-A	o MOUNTED CIRCUIT BOARD, "MPU-53"
C1	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C2	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C3	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C4	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C5	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C6	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C7	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C8	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C9	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C10	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C11	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C12	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C13	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C14	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C15	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C16	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C17	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C18	1-163-129-00	s CERAMIC CHIP 330PF 5% 50V
C19	1-163-097-00	s CERAMIC CHIP 15PF 5% 50V
C20	1-163-097-00	s CERAMIC CHIP 15PF 5% 50V
C21	1-131-345-00	s TANTALUM 0.47uF 10% 35V
C22	1-124-484-11	s ELECT 220uF 20% 35V
C23	1-124-472-11	s ELECT 470uF 20% 10V
C24	1-124-472-11	s ELECT 470uF 20% 10V
C25	1-127-515-11	s ELECT(SOLID) 47uF 20% 10V
C26	1-163-038-00	s CERAMIC CHIP 0.1uF 25V
C27	1-131-347-00	s TANTALUM 1MF 10% 35V
C28	1-163-038-00	s CERAMIC CHIP 0.1uF 25V
C29	1-126-176-11	s ELECT 220MF 20% 10V
C30	1-163-038-00	s CERAMIC CHIP 0.1uF 25V
C31	1-164-232-11	s CERAMIC CHIP 0.01MF 10% 100V
C32	1-131-381-00	s TANTALUM 47uF 20% 10V
C33	1-131-381-00	s TANTALUM 47uF 20% 10V
C34	1-131-381-00	s TANTALUM 47uF 20% 10V
C35	1-131-381-11	s TANTALUM 47uF 2% 10V
CN1	1-566-400-21	o PIN, CONNECTOR 20P
CN2	1-566-401-11	o CONNECTOR, 22P, MALE
CN3	1-566-398-21	o CONNECTOR, 16P, MALE
CN4	1-506-473-11	o CONNECTOR, 8P, MALE
D1	8-719-800-76	s DIODE 1SS226
D2	8-719-800-76	s DIODE 1SS226
D3	8-719-800-76	s DIODE 1SS226
D4	8-719-800-76	s DIODE 1SS226
D5	8-719-800-76	s DIODE 1SS226
D6	8-719-800-76	s DIODE 1SS226
D7	8-719-800-76	s DIODE 1SS226
D8	8-719-800-76	s DIODE 1SS226
D9	8-719-800-76	s DIODE 1SS226
D10	8-719-800-76	s DIODE 1SS226
D11	8-719-800-76	s DIODE 1SS226
D12	8-719-800-76	s DIODE 1SS226
D13	8-719-800-76	s DIODE 1SS226
D14	8-719-800-76	s DIODE 1SS226
D15	8-719-800-76	s DIODE 1SS226
D16	8-719-800-76	s DIODE 1SS226
D17	8-719-800-76	s DIODE 1SS226
D18	8-719-800-76	s DIODE 1SS226

## (MPU-53 BOARD)

Ref. No. or Q'ty	Part No.	SP Description	Ref. No. or Q'ty	Part No.	SP Description
D18	8-719-106-70 s	DIODE RD12M-B1	R26	1-216-025-00 s	METAL CHIP 100 5% 1/10W
FBI	1-535-178-00 s	RES. FERRITE	R27	1-216-025-00 s	METAL CHIP 100 5% 1/10W
IC1	8-759-925-74 s	IC SN74HC04NS	R28	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC2	8-759-918-65 s	IC TL7700CPS	R29	1-216-025-00 s	METAL CHIP 100 5% 1/10W
IC3	8-759-008-48 s	IC MC74HC86F	R30	1-216-025-00 s	METAL CHIP 100 5% 1/10W
IC4	8-759-971-23 s	IC MSM80C49-757GS-K	R31	1-216-025-00 s	METAL CHIP 100 5% 1/10W
IC5	8-759-925-85 s	IC SN74HC32NS	R32	1-216-025-00 s	METAL CHIP 100 5% 1/10W
IC6	8-759-926-67 s	IC SN74HC374NS	R33	1-216-025-00 s	METAL CHIP 100 5% 1/10W
IC7	8-759-926-49 s	IC SN74HC245NS	R34	1-216-025-00 s	METAL CHIP 100 5% 1/10W
IC8	8-759-926-23 s	IC SN74HC163NS	R35	1-216-025-00 s	METAL CHIP 100 5% 1/10W
IC9	8-759-321-84 s	HD641807F8	R36	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC10	8-759-926-11 s	IC SN74HC138NS	R37	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC11	8-752-328-19 s	IC CXK5864BM-10L	R38	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC12	8-759-198-89 s	IC 27C256A-RCP372-3.00	R39	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC13	8-759-106-58 s	IC UPD7004C	R40	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC14	8-759-009-07 s	IC MC14053BF	R41	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC15	8-759-009-07 s	IC MC14053BF	R42	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC16	8-759-938-68 s	IC CXD1095Q	R43	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC17	8-759-234-67 s	IC TMP82C79M-2	R44	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
IC18	1-466-254-11 s	CONVERTER UNIT, DC-DC	R45	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
JR1	1-216-295-00 s	METAL CHIP 0 5% 1/10W	R46	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
L1	1-410-948-11 s	INDUCTOR 100uH	R47	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
R48	1-216-085-00 s	METAL CHIP 33K 5% 1/10W	R49	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
R50	1-216-085-00 s	METAL CHIP 33K 5% 1/10W	R45	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
PH1	8-719-820-86 s	DIODE TLP112	R51	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
Q1	8-729-271-23 s	TRANSISTOR 2SC2712	R52	1-216-057-00 s	METAL CHIP 2.2K 5% 1/10W
Q2	8-729-216-22 s	TRANSISTOR 2SA1162	R53	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
Q3	8-729-216-22 s	TRANSISTOR 2SA1162	R54	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
Q4	8-729-271-23 s	TRANSISTOR 2SC2712	R55	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
Q5	8-729-271-23 s	TRANSISTOR 2SC2712	R56	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
Q6	8-729-271-23 s	TRANSISTOR 2SC2712	R57	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
Q7	8-729-140-97 s	TRANSISTOR 2SB734-34	R58	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
R1	1-216-025-00 s	METAL CHIP 100 5% 1/10W	R59	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
R2	1-216-121-00 s	METAL CHIP 1M 5% 1/10W	R60	1-216-085-00 s	METAL CHIP 33K 5% 1/10W
R3	1-216-057-00 s	METAL CHIP 2.2K 5% 1/10W	R61	1-216-089-00 s	METAL CHIP 47K 5% 1/10W
R4	1-216-085-00 s	METAL CHIP 33K 5% 1/10W	R62	1-216-097-00 s	METAL CHIP 100K 5% 1/10W
R5	1-216-079-00 s	METAL CHIP 18K 5% 1/10W	R63	1-216-105-00 s	METAL CHIP 220K 5% 1/10W
R6	1-216-085-00 s	METAL CHIP 33K 5% 1/10W	R64	1-216-067-00 s	CARBON 5.6K 5% 1/10W
R7	1-216-085-00 s	METAL CHIP 33K 5% 1/10W	R65	1-216-067-00 s	CARBON 5.6K 5% 1/10W
R8	1-216-022-00 s	METAL CHIP 75 5% 1/10W	S1	1-571-967-11 s	SWITCH, DIP (PIANO TYPE)
R9	1-216-022-00 s	METAL CHIP 75 5% 1/10W	S2	1-571-967-11 s	SWITCH, DIP (PIANO TYPE)
R10	1-216-085-00 s	METAL CHIP 33K 5% 1/10W	X1	1-527-941-00 s	VIBRATOR, CRYSTAL 10.944MHz
R11	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R12	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R13	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R14	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R15	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R16	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R17	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R18	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R19	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R20	1-216-085-00 s	METAL CHIP 33K 5% 1/10W			
R21	1-216-025-00 s	METAL CHIP 100 5% 1/10W			
R22	1-216-025-00 s	METAL CHIP 100 5% 1/10W			
R23	1-216-025-00 s	METAL CHIP 100 5% 1/10W			
R24	1-216-025-00 s	METAL CHIP 100 5% 1/10W			
R25	1-216-025-00 s	METAL CHIP 100 5% 1/10W			

## SW-371 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-7515-059-A	o MOUNTED CIRCUIT BOARD, "SW-371"
4pcs	1-563-521-11	o CONNECTOR, 20P, FEMALE
4pcs	1-566-475-11	o PIN, SOCKET 3P
3pcs	2-141-017-01	s KNOB, RV
1pc	2-141-028-01	o PLATE (2), FIXED, RV
2pcs	4-876-607-21	o COLLAR (E), PLATE, JACK
3pcs	7-621-734-09	s SET-SCT, HEX, 2.6X3
4pcs	7-682-546-04	s SCREW +B 3X5
C1	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C2	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C3	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C4	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C5	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C6	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C7	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C8	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C9	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C10	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C11	1-164-232-11	s CERAMIC CHIP 0.01uF 20% 100V
C12	1-127-491-00	s ELECT SOLID 20uF 20%
C13	1-127-491-00	s ELECT SOLID 20uF 20%
C14	1-126-157-11	s ELECT 10uF 20% 16V
CN1	1-566-400-11	o CONNECTOR, 20P, MALE
CN2	1-566-401-11	o CONNECTOR, 22P, MALE
CN3	1-566-398-11	o CONNECTOR, 16P, MALE
CN4	1-566-405-11	o CONNECTOR, 30P, MALE
CN5	1-506-469-11	o CONNECTOR, 4P, MALE
CN6	1-566-402-11	o CONNECTOR, 24P, MALE
D1	8-719-104-31	s DIODE 1S2838
D2	8-719-104-31	s DIODE 1S2838
D3	8-719-104-31	s DIODE 1S2838
D4	8-719-104-31	s DIODE 1S2838
D5	8-719-104-31	s DIODE 1S2838
D6	8-719-104-31	s DIODE 1S2838
D7	8-719-104-31	s DIODE 1S2838
D8	8-719-104-31	s DIODE 1S2838
D9	8-719-104-31	s DIODE 1S2838
D10	8-719-104-31	s DIODE 1S2838
D11	8-719-104-31	s DIODE 1S2838
D12	8-719-104-31	s DIODE 1S2838
D13	8-719-104-31	s DIODE 1S2838
D14	8-719-104-31	s DIODE 1S2838
D15	8-719-104-31	s DIODE 1S2838
D16	8-719-104-31	s DIODE 1S2838
D17	8-719-104-31	s DIODE 1S2838
D18	8-719-104-31	s DIODE 1S2838
D19	8-719-104-31	s DIODE 1S2838
D20	8-719-948-07	s LED LD-001MG, GRN
D21	8-719-948-06	s DIODE LB-202ML
D22	8-719-948-06	s DIODE LB-202ML
D23	8-719-939-52	s DIODE LA-301ML
D24	8-719-939-52	s DIODE LA-301ML
D25	8-719-800-76	s DIODE 1SS226
IC1	8-759-926-80	s IC SN74HC573NS
IC2	8-759-926-80	s IC SN74HC573NS
IC3	8-759-926-80	s IC SN74HC573NS
IC4	8-759-926-80	s IC SN74HC573NS
IC5	8-759-926-80	s IC SN74HC573NS

## (SW-371 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
IC6	8-759-926-80	s IC SN74HC573NS
IC7	8-759-926-80	s IC SN74HC573NS
IC8	8-759-208-62	s TC5068BP
IC9	8-759-208-62	s TC5068BP
IC10	8-759-926-11	s IC SN74HC138NS
IC11	8-759-207-31	s IC TC74HC4028F
IC12	8-759-031-84	s IC SC7S04F
L1	1-408-417-00	s INDUCTOR 47uH
L2	1-408-417-00	s INDUCTOR 47uH
L3	1-408-417-00	s INDUCTOR 47uH
Q1	8-729-920-34	s TRANSISTOR DTC143XK
Q2	8-729-920-34	s TRANSISTOR DTC143XK
Q3	8-729-920-34	s TRANSISTOR DTC143XK
Q4	8-729-920-34	s TRANSISTOR DTC143XK
Q5	8-729-920-34	s TRANSISTOR DTC143XK
Q6	8-729-920-34	s TRANSISTOR DTC143XK
Q7	8-729-920-34	s TRANSISTOR DTC143XK
Q8	8-729-920-34	s TRANSISTOR DTC143XK
Q9	8-729-920-34	s TRANSISTOR DTC143XK
Q10	8-729-920-34	s TRANSISTOR DTC143XK
Q11	8-729-920-34	s TRANSISTOR DTC143XK
Q12	8-729-920-34	s TRANSISTOR DTC143XK
Q13	8-729-920-34	s TRANSISTOR DTC143XK
Q14	8-729-920-34	s TRANSISTOR DTC143XK
Q15	8-729-920-34	s TRANSISTOR DTC143XK
Q16	8-729-920-34	s TRANSISTOR DTC143XK
Q17	8-729-920-34	s TRANSISTOR DTC143XK
Q18	8-729-920-34	s TRANSISTOR DTC143XK
Q19	8-729-920-34	s TRANSISTOR DTC143XK
Q20	8-729-920-34	s TRANSISTOR DTC143XK
Q21	8-729-920-34	s TRANSISTOR DTC143XK
Q22	8-729-920-34	s TRANSISTOR DTC143XK
Q23	8-729-920-34	s TRANSISTOR DTC143XK
Q24	8-729-920-34	s TRANSISTOR DTC143XK
Q25	8-729-920-34	s TRANSISTOR DTC143XK
Q26	8-729-920-34	s TRANSISTOR DTC143XK
Q27	8-729-920-34	s TRANSISTOR DTC143XK
Q28	8-729-920-34	s TRANSISTOR DTC143XK
Q29	8-729-920-34	s TRANSISTOR DTC143XK
Q30	8-729-920-34	s TRANSISTOR DTC143XK
Q31	8-729-920-34	s TRANSISTOR DTC143XK
Q32	8-729-920-34	s TRANSISTOR DTC143XK
Q33	8-729-920-34	s TRANSISTOR DTC143XK
Q34	8-729-920-34	s TRANSISTOR DTC143XK
Q35	8-729-920-34	s TRANSISTOR DTC143XK
Q36	8-729-920-34	s TRANSISTOR DTC143XK
Q37	8-729-920-34	s TRANSISTOR DTC143XK
Q38	8-729-920-34	s TRANSISTOR DTC143XK
Q39	8-729-920-34	s TRANSISTOR DTC143XK
Q40	8-729-920-34	s TRANSISTOR DTC143XK
Q41	8-729-920-34	s TRANSISTOR DTC143XK
Q42	8-729-920-34	s TRANSISTOR DTC143XK
Q43	8-729-920-34	s TRANSISTOR DTC143XK
Q44	8-729-920-34	s TRANSISTOR DTC143XK
Q45	8-729-920-34	s TRANSISTOR DTC143XK
Q46	8-729-271-23	s TRANSISTOR 2SC2712
Q47	8-729-271-23	s TRANSISTOR 2SC2712
Q48	8-729-271-23	s TRANSISTOR 2SC2712

## (SW-371 BOARD)

Ref. No. or Q'ty	Part No.	SP Description	Ref. No. or Q'ty	Part No.	SP Description
Q49	8-729-271-23	s TRANSISTOR 2SC2712	R31	1-216-029-00	s METAL CHIP 150 5% 1/10W
Q50	8-729-271-23	s TRANSISTOR 2SC2712	R32	1-216-029-00	s METAL CHIP 150 5% 1/10W
Q51	8-729-271-23	s TRANSISTOR 2SC2712	R33	1-216-029-00	s METAL CHIP 150 5% 1/10W
Q52	8-729-271-23	s TRANSISTOR 2SC2712	R34	1-216-029-00	s METAL CHIP 150 5% 1/10W
Q53	8-729-271-23	s TRANSISTOR 2SC2712	R35	1-216-029-00	s METAL CHIP 150 5% 1/10W
Q54	8-729-271-23	s TRANSISTOR 2SC2712	R36	1-216-029-00	s METAL CHIP 150 5% 1/10W
Q55	8-729-271-23	s TRANSISTOR 2SC2712	R37	1-216-025-00	s METAL CHIP 100 5% 1/10W
Q56	8-729-271-23	s TRANSISTOR 2SC2712	R38	1-216-025-00	s METAL CHIP 100 5% 1/10W
Q57	8-729-271-23	s TRANSISTOR 2SC2712	R39	1-216-025-00	s METAL CHIP 100 5% 1/10W
Q58	8-729-271-23	s TRANSISTOR 2SC2712	R40	1-216-025-00	s METAL CHIP 100 5% 1/10W
Q59	8-729-271-23	s TRANSISTOR 2SC2712	R41	1-216-025-00	s METAL CHIP 100 5% 1/10W
Q60	8-729-906-45	s TRANSISTOR DTA143XK	R42	1-216-025-00	s METAL CHIP 100 5% 1/10W
Q61	8-729-906-45	s TRANSISTOR DTA143XK	R43	1-216-025-00	s METAL CHIP 100 5% 1/10W
Q62	8-729-906-45	s TRANSISTOR DTA143XK	R44	1-216-025-00	s METAL CHIP 100 5% 1/10W
Q63	8-729-906-45	s TRANSISTOR DTA143XK	R45	1-216-025-00	s METAL CHIP 100 5% 1/10W
Q64	8-729-906-45	s TRANSISTOR DTA143XK	R46	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q65	8-729-906-45	s TRANSISTOR DTA143XK	R47	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q66	8-729-906-45	s TRANSISTOR DTA143XK	R48	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q67	8-729-906-45	s TRANSISTOR DTA143XK	R49	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q68	8-729-159-64	s TRANSISTOR 2SD596	R50	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q69	8-729-159-64	s TRANSISTOR 2SD596	R51	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q70	8-729-159-64	s TRANSISTOR 2SD596	R52	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q71	8-729-159-64	s TRANSISTOR 2SD596	R53	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q72	8-729-159-64	s TRANSISTOR 2SD596	R54	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q73	8-729-159-64	s TRANSISTOR 2SD596	R55	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q74	8-729-159-64	s TRANSISTOR 2SD596	R56	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q75	8-729-159-64	s TRANSISTOR 2SD596	R57	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q76	8-729-159-64	s TRANSISTOR 2SD596	R58	1-216-047-00	s METAL CHIP 820 5% 1/10W
Q77	8-729-920-34	s TRANSISTOR DTC143XK	R59	1-216-047-00	s METAL CHIP 820 5% 1/10W
R1	1-216-025-00	s METAL CHIP 100 5% 1/10W	R60	1-216-019-00	s METAL CHIP 56 5% 1/10W
R2	1-216-049-00	s METAL CHIP 1K 5% 1/10W	R61	1-216-019-00	s METAL CHIP 56 5% 1/10W
R3	1-216-029-00	s METAL CHIP 150 5% 1/10W	R62	1-216-019-00	s METAL CHIP 56 5% 1/10W
R4	1-216-041-00	s METAL CHIP 470 5% 1/10W	R63	1-216-019-00	s METAL CHIP 56 5% 1/10W
R5	1-216-029-00	s METAL CHIP 150 5% 1/10W	R64	1-216-019-00	s METAL CHIP 56 5% 1/10W
R6	1-216-029-00	s METAL CHIP 150 5% 1/10W	R65	1-216-019-00	s METAL CHIP 56 5% 1/10W
R7	1-216-017-00	s METAL CHIP 47 5% 1/10W	R66	1-216-019-00	s METAL CHIP 56 5% 1/10W
R8	1-216-023-00	s METAL CHIP 82 5% 1/10W	R67	1-216-019-00	s METAL CHIP 56 5% 1/10W
R9	1-216-039-00	s METAL CHIP 390 5% 1/10W	R68	1-216-049-00	s METAL CHIP 1K 5% 1/10W
R10	1-216-039-00	s METAL CHIP 390 5% 1/10W	R69	1-216-049-00	s METAL CHIP 1K 5% 1/10W
R11	1-216-039-00	s METAL CHIP 390 5% 1/10W	R70	1-216-049-00	s METAL CHIP 1K 5% 1/10W
R12	1-216-039-00	s METAL CHIP 390 5% 1/10W	R71	1-216-049-00	s METAL CHIP 1K 5% 1/10W
R13	1-216-039-00	s METAL CHIP 390 5% 1/10W	R72	1-216-049-00	s METAL CHIP 1K 5% 1/10W
R14	1-216-039-00	s METAL CHIP 390 5% 1/10W	R73	1-216-049-00	s METAL CHIP 1K 5% 1/10W
R15	1-216-029-00	s METAL CHIP 150 5% 1/10W	R74	1-216-049-00	s METAL CHIP 1K 5% 1/10W
R16	1-216-029-00	s METAL CHIP 150 5% 1/10W	R75	1-216-049-00	s METAL CHIP 1K 5% 1/10W
R17	1-216-029-00	s METAL CHIP 150 5% 1/10W	R76	1-216-049-00	s METAL CHIP 1K 5% 1/10W
R18	1-216-029-00	s METAL CHIP 150 5% 1/10W	R77	1-216-025-00	s METAL CHIP 100 5% 1/10W
R19	1-216-029-00	s METAL CHIP 150 5% 1/10W	R78	1-216-025-00	s METAL CHIP 100 5% 1/10W
R20	1-216-029-00	s METAL CHIP 150 5% 1/10W	R79	1-216-025-00	s METAL CHIP 100 5% 1/10W
R21	1-216-029-00	s METAL CHIP 150 5% 1/10W	R80	1-216-085-00	s METAL CHIP 33K 5% 1/10W
R22	1-216-029-00	s METAL CHIP 150 5% 1/10W	R81	1-216-089-00	s METAL CHIP 47K 5% 1/10W
R23	1-216-029-00	s METAL CHIP 150 5% 1/10W	R82	1-216-065-00	s METAL CHIP 4.7K 5% 1/10W
R24	1-216-029-00	s METAL CHIP 150 5% 1/10W	R83	1-216-069-00	s METAL CHIP 6.8K 5% 1/10W
R25	1-216-053-00	s METAL CHIP 1.5K 5% 1/10W	R84	1-216-109-00	s METAL CHIP 330K 5% 1/10W
R26	1-216-053-00	s METAL CHIP 1.5K 5% 1/10W	RV1	1-230-138-00	s RES, VAR, CARBON 5K
R27	1-216-053-00	s METAL CHIP 1.5K 5% 1/10W	RV2	1-230-138-00	s RES, VAR, CARBON 5K
R28	1-216-029-00	s METAL CHIP 150 5% 1/10W	RV3	1-230-138-00	s RES, VAR, CARBON 5K
R29	1-216-029-00	s METAL CHIP 150 5% 1/10W	RV4	1-230-138-00	s RES, VAR, CARBON 5K
R30	1-216-029-00	s METAL CHIP 150 5% 1/10W	RV5	1-230-138-00	s RES, VAR, CARBON 5K

(SW-371 BOARD)

Ref. No.  
or Q'ty Part No. SP Description

RV6 1-230-138-00 s RES, VAR, CARBON 5K  
RV7 1-238-293-11 s RES, VAR, CARBON 10K  
RV8 1-238-293-11 s RES, VAR, CARBON 10K  
RV9 1-238-293-11 s RES, VAR, CARBON 10K

S1 1-554-043-41 s SWITCH, PUSH  
S2 1-570-211-11 s SWITCH, PUSH  
S3 1-554-048-00 s SWITCH, PUSH  
S4 1-554-048-00 s SWITCH, PUSH  
S5 1-570-210-11 s SWITCH, PUSH

S6 1-570-221-11 s SWITCH, PUSH  
S7 1-570-207-41 s SWITCH, PUSH  
S8 1-570-207-41 s SWITCH, PUSH  
S9 1-570-207-41 s SWITCH, PUSH  
S10 1-570-207-41 s SWITCH, PUSH

S11 1-570-207-41 s SWITCH, PUSH  
S12 1-570-207-41 s SWITCH, PUSH  
S13 1-570-206-91 s SWITCH, PUSH  
S14 1-570-211-11 s SWITCH, PUSH  
S15 1-554-048-00 s SWITCH, PUSH

S16 1-554-048-00 s SWITCH, PUSH  
S17 1-570-208-21 s SWITCH, PUSH  
S18 1-570-208-21 s SWITCH, PUSH  
S19 1-570-208-21 s SWITCH, PUSH  
S20 1-570-207-91 s SWITCH, PUSH

S21 1-570-207-71 s SWITCH, PUSH  
S22 1-570-208-11 s SWITCH, PUSH  
S23 1-570-209-11 s SWITCH, PUSH  
S24 1-570-209-11 s SWITCH, PUSH  
S25 1-570-209-11 s SWITCH, PUSH

S26 1-554-048-00 s SWITCH, PUSH  
S27 1-570-207-61 s SWITCH, PUSH  
S28 1-554-048-00 s SWITCH, PUSH  
S29 1-570-207-51 s SWITCH, PUSH  
S30 1-570-207-31 s SWITCH, PUSH

S31 1-570-207-21 s SWITCH, PUSH  
S32 1-570-207-11 s SWITCH, PUSH

FRAME

Ref. No.  
or Q'ty Part No. SP Description

1-224-981-31 s RES, VAR, METAL 5K "MASTER BLACK"  
(FOR RCP-3720)  
1-224-981-41 s RES, VAR, METAL 5K "MASTER BLACK"  
(FOR RCP-3721)

1-230-817-11 s RES, VAR, METAL 5K "IRIS"  
(FOR RCP-3720)  
1-224-981-00 s RES, VAR, METAL 5K "IRIS"  
(FOR RCP-3721)

1-570-504-11 s SWITCH, MICRO "LOCK"  
(FOR RCP-3720)

CN1F (to DSP-27 board)  
(FOR RCP-3720)  
1-563-883-11 o HOUSING, 30P  
1-563-869-11 o CONTACT, FEMALE AWG26-30

CN1F (to DSP-28 board)  
(FOR RCP-3721)  
1-563-883-11 o HOUSING, 30P  
1-563-869-11 o CONTACT, FEMALE AWG26-30

CN1F (to MPU-53 board)  
1-563-878-11 o HOUSING, 20P  
1-563-869-11 o CONTACT, FEMALE AWG26-30

CN1F (to SW-371 board)  
1-563-878-11 o HOUSING, 20P  
1-563-869-11 o CONTACT, FEMALE AWG26-30

CN2F (to DSP-27 board)  
(FOR RCP-3720)  
1-562-151-11 o HOUSING, 6P  
1-563-088-11 o CONTACT, FEMALE AWG24-30

CN2F (to DSP-28 board)  
(FOR RCP-3721)  
1-562-149-11 o HOUSING, 4P  
1-563-088-11 o CONTACT, FEMALE AWG24-30

CN2F (to MPU-53 board)  
1-563-879-11 o HOUSING, 22P  
1-563-869-11 o CONTACT, FEMALE AWG26-30

CN3F (to SW-371 board)  
1-563-879-11 o HOUSING, 22P  
1-563-869-11 o CONTACT, FEMALE AWG26-30

CN3F (to MPU-53 board)  
1-563-876-11 o HOUSING, 16P  
1-563-869-11 o CONTACT, FEMALE AWG26-30

CN4F (to SW-371 board)  
1-563-876-11 o HOUSING, 16P  
1-563-869-11 o CONTACT, FEMALE AWG26-30

CN4F (to MPU-53 board)  
1-562-153-11 o HOUSING, 8P  
1-563-088-11 o CONTACT, FEMALE AWG24-30

CN5F (to SW-371 board)  
1-563-883-11 o HOUSING, 30P  
1-563-869-11 o CONTACT, FEMALE AWG26-30

CN5F (to MPU-53 board)  
1-562-149-11 o HOUSING, 4P  
1-563-088-11 o CONTACT, FEMALE AWG24-30

(FRAME)

Ref. No.  
or Q'ty Part No. SP Description

CN101 1-564-968-11 s CONNECTOR, 16P, FEMALE "CCU"  
CN102 1-561-795-00 s SOCKET 6P, FEMALE "PREVIEW"

ON162 1 001 100 00 3 SOCKET CT, FEMALE PREVIEW

## **PACKING MATERIALS & SUPPLIED ACCESSORIES**

Ref. No.  
or Q'ty Part No. SP Description

1pc 1-560-691-11 s PLUG 6P, MALE  
2pcs 1-564-970-11 s CONNECTOR, MULTI (SQUARE) 16P,  
      ~~MALE~~

ZPES 1-604-510-11-3 CONNECTOR, MULTI  
FEMALE  
S 6-111-606-81 BRACKET (S) BACK

2pcs 2-141-029-01 o BRACKET (2), RA  
1pc 2-355-375-01 o PLATE, NUMBER